Service
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Service Manual

Horizontal Frequency
30- 83KHz

TABLE OF CONTENTS

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFOMER FOR THIS UNIT WHEN SERVICING

GB 3138 106 10522

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Revision List

Version	Release Date	Revision History
A00	May.17, 2006	Initial release
A01	Jun.15, 2006	Add CTV Model 190V7FB/00, 190V7FB/69, 190V7FB/93 in Item 16

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all Philips Company** Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

* * Hereafter throughout this manual, Philips Company will be referred to as Philips.

WARNING

Use of substitute replacement parts, which do not have the same, specified safety characteristics may create shock, fire,
or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips
assumes no liability, express or implied, arising out of any unauthorized modification of design.

Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:

DANGER-Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

-Must mount the module using mounting holes arranged in four corners.

-Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.

-Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the
panel.

-Protect the module from the ESD as it may damage the electronic circuit (C-MOS).

-Make certain that treatment person’s body is grounded through wristband.

-Do not leave the module in high temperature and in areas of high humidity for a long time.

-Avoid contact with water as it may a short circuit within the module.

-If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

1. Monitor Specifications

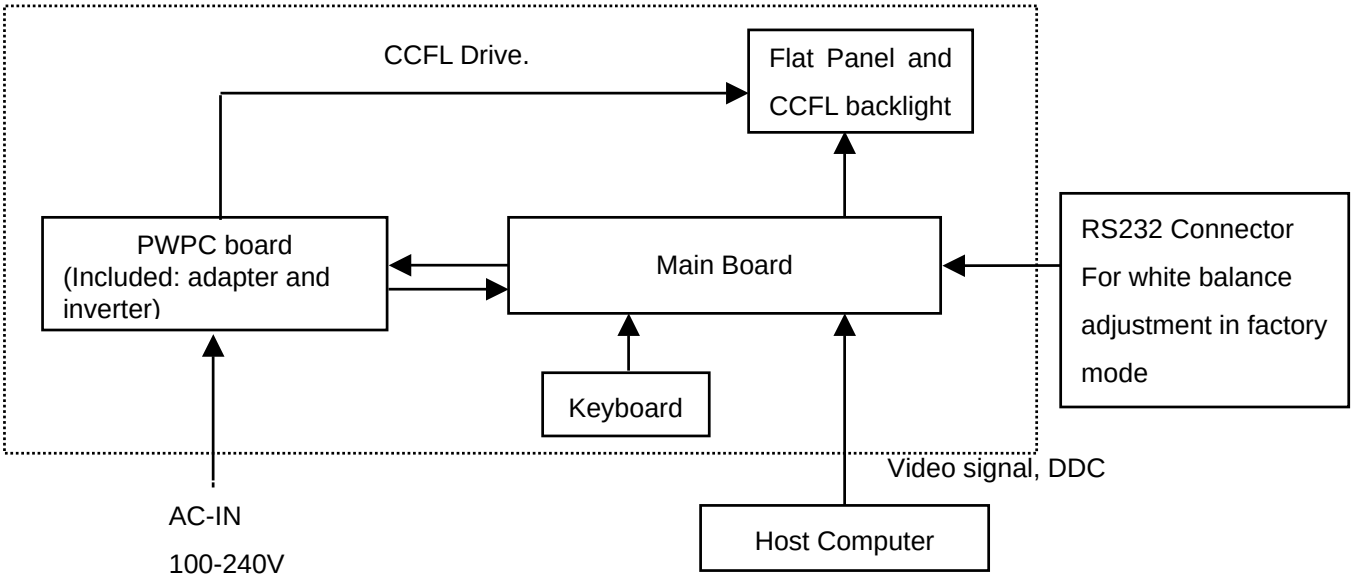
LCD Panel	Screen type	Active matrix - TFT LCD
	Panel Type	LM190E03 (LPL)
	Size	481.9 mm (19.0")
	Pixel pitch	0.294mm(H) x 0.294mm(V)
	Viewable angle (CR>10)	Horizontal 160º, Vertical 160º (type)
	Response time	8ms (type)
Input	Video	0.7 Vp-p, input impedance, 75 ohm @DC
	Separate Sync	TTL level, input impedance 2.2k ohm terminate
	Horizontal Frequency	30kHz – 83kHz
	Vertical refresh rate	56 - 76Hz
Display Colors		16.2 M
Contrast Ratio		700:1
White Luminance		300cd/m^2
Video dot rate		140 MHz
Maximum Resolution		1280 x 1024 at 75Hz (analog input) 1280 x 1024 at 75Hz (digital input)
Recommended Resolution		1280 x 1024 at 60Hz (digital input)
Plug & Play		VESA DDC2B
Power Consumption		Power on: < 34 W Power off: < 1 W
Input Connector		D-Sub 15pin D-DVI 24 pin
Input Video Signal		0.7 Vp-p, input impedance, 75 ohm @DC
Tilt		-5° ～ 25°
Maximum Screen Size		Horizontal: 376.32mm;Vertical: 301.056 mm
Power Source		100-240 VAC, 50/60 Hz
Environmental Considerations		Operating Temp: 5°C to 40°C Operating Humidity: 20% to 80% Storage Temp.: -20°C to 60°C
Weight (Net)		5.5kg
Cabinet color		190V7FB: Black

2. LCD Monitor Description

The LCD monitor will contain a main board, PWPC board, keypad board, which house the flat panel control logic, brightness control logic and DDC.

The power board will provide AC to DC Inverter voltage to drive the backlight of panel and the main board chips each voltage.

Monitor Block Diagram



3. Operation instructions

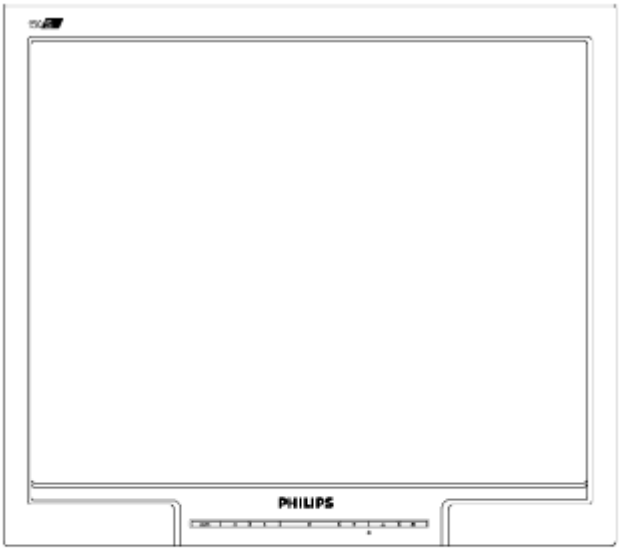
3.1 General Instructions

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor. By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor, the power indicator will light up.

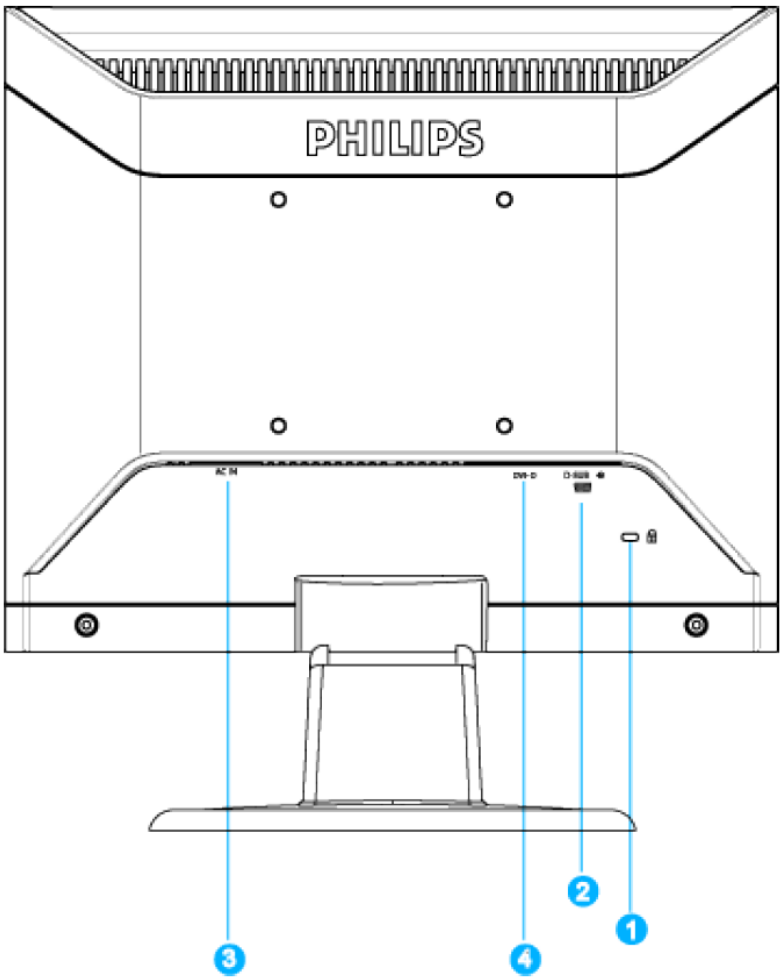
3.2 Control Buttons

Front View



1		To switch monitor's power On and Off
2		To access OSD menu
3		To adjust the OSD
4		To adjust brightness of the display
5		To adjust the OSD
6	AUTO	Automatically adjust the horizontal position, vertical position, phase and clock settings.

Rear View

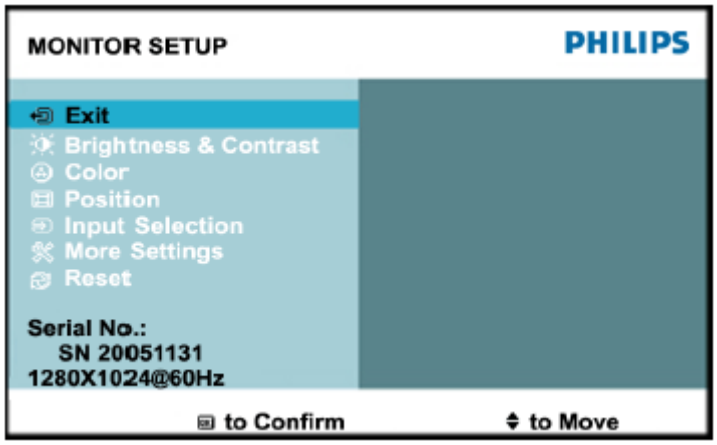


1	Kensington anti-thief lock
2	VGA input
3	AC power input
4	DVI-D input

3.3 Adjusting the Picture

This is a feather in all Philips LCD monitors. It allows an end user to adjust screen performance of the monitors directly through an on-screen instruction window. The user interface provides user-friendliness and ease-of-use when operating the monitor.

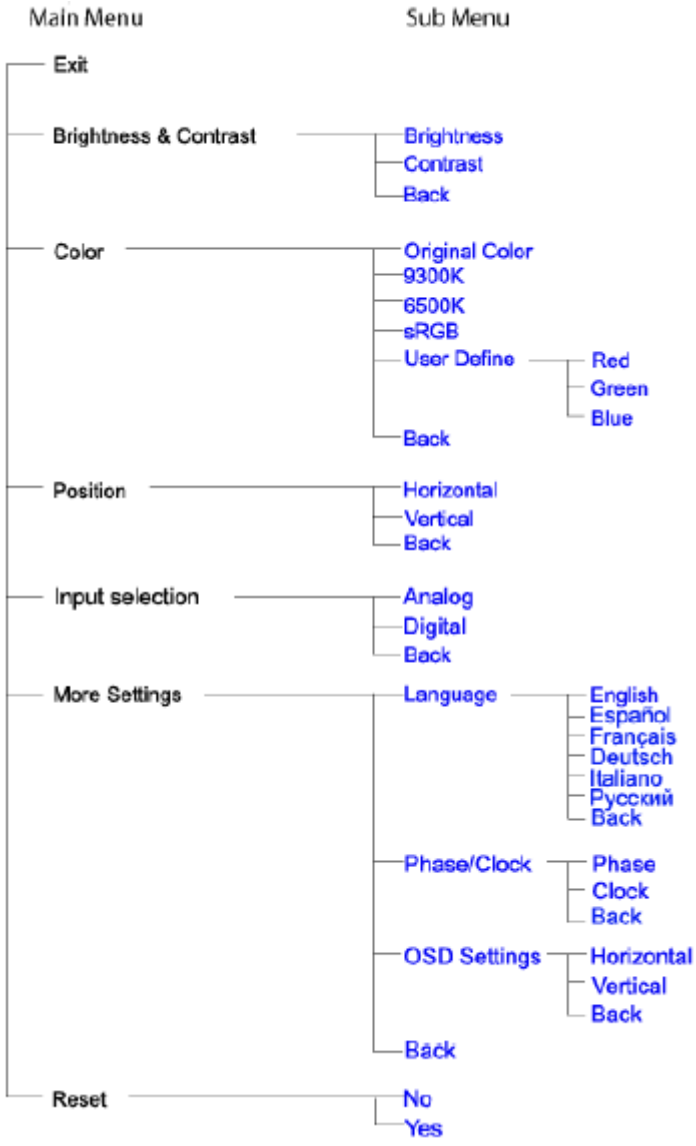
When you press the OK button on the front control of your monitor, the On-Screen Display (OSD) main controls window will pop up and you can then start making adjustments to your monitor’s various features. Use the ◀▶ or the ▲▼ keys to make your adjustments.



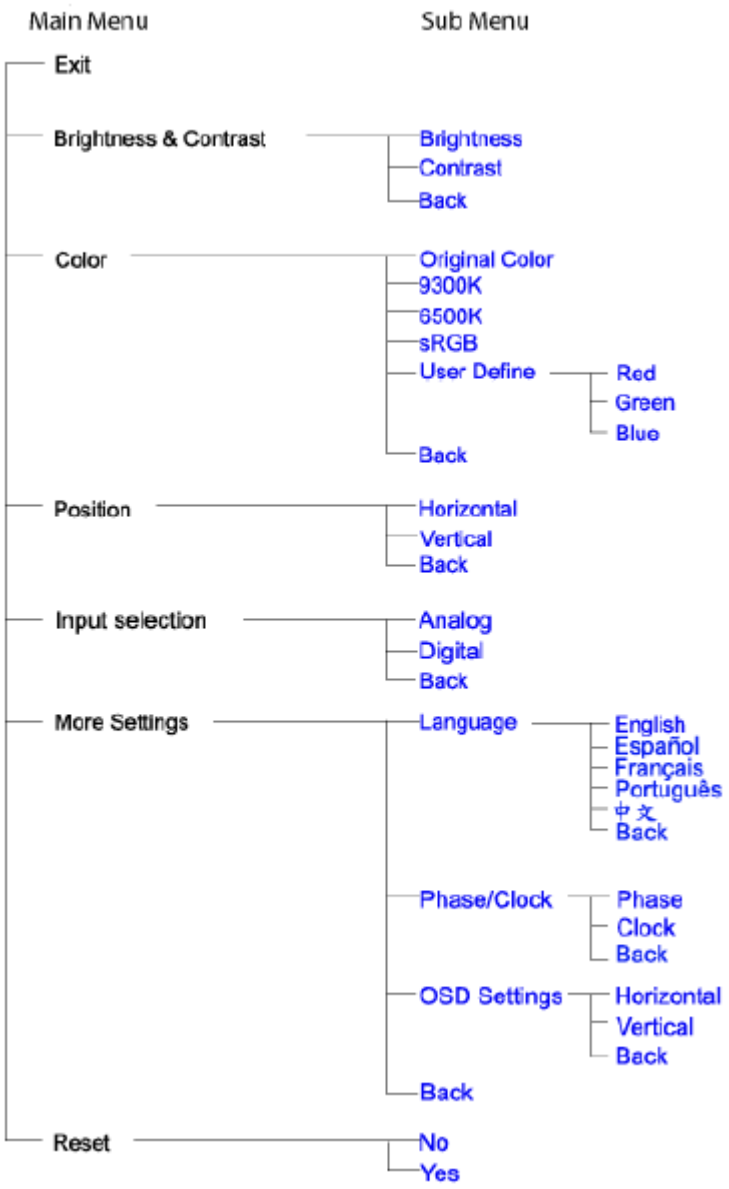
The OSD tree

Below is an overall view of the structure of the On-Screen Display. You can use this as a reference when you want to work your way around the different adjustments later on.

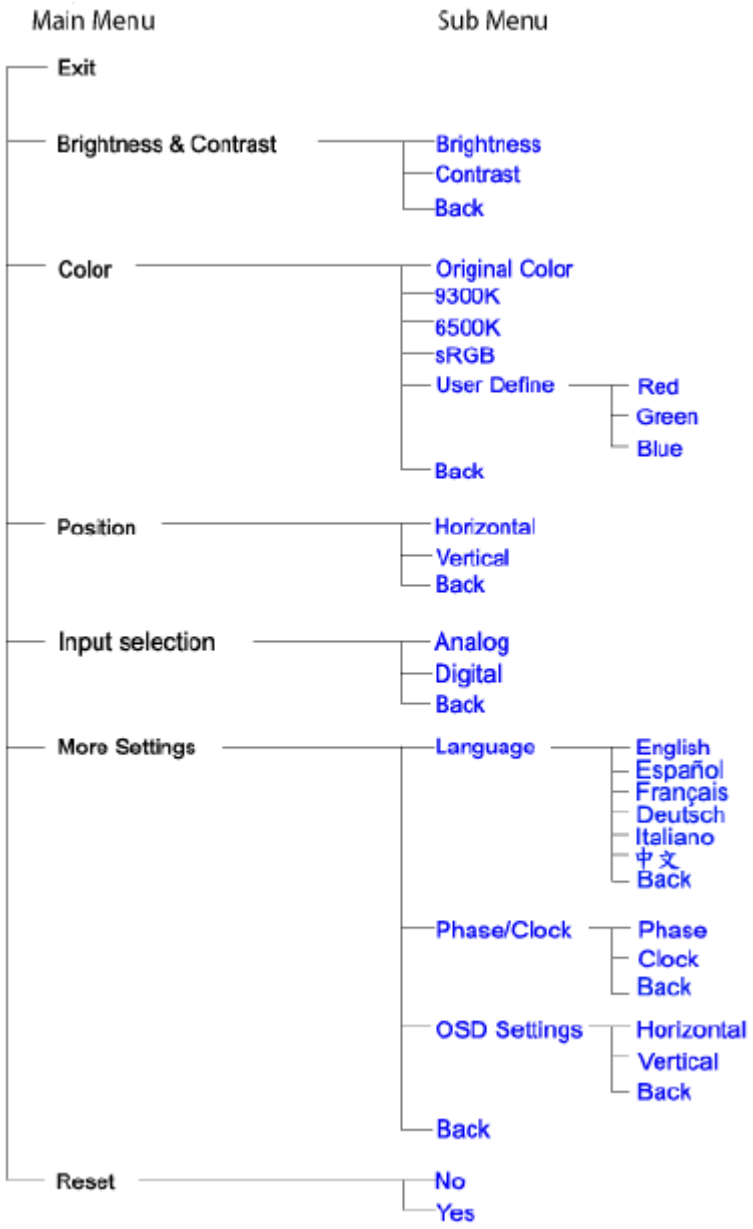
Only available for Europe Model



Only available for Nafta Model

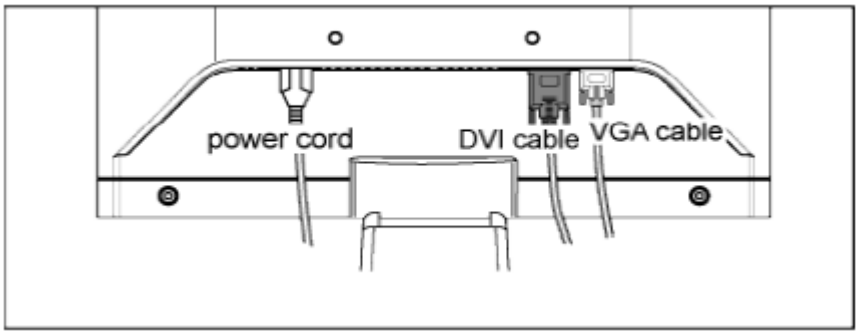


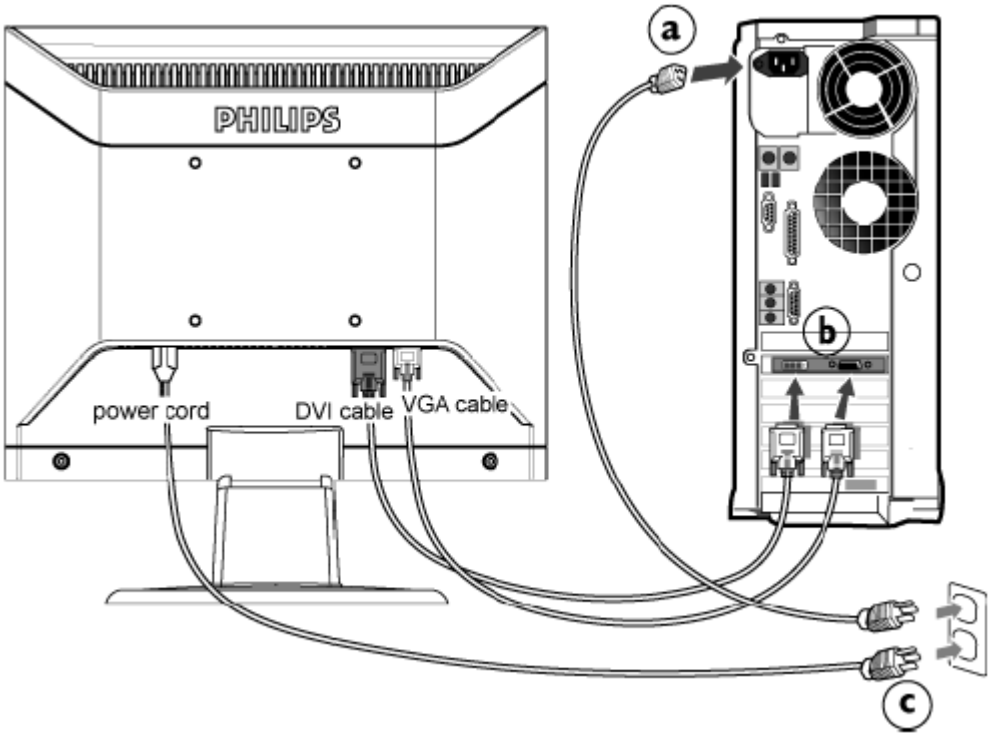
Only available for Asia Pacific Model



3.4 Connecting to the PC

1) Connect the power cord to the back of the monitor firmly. (Philips has pre-connected) VGA cable for the first installation.)





2) Connect to PC

(a) Turn off your computer and unplug its power cable.

(b) Connect the monitor signal cable to the video connector on the back of your computer.

(c) Plug the power cord of your computer and your monitor into a nearby outlet.

(d) Turn on your computer and monitor. If the monitor displays an image, installation is complete.

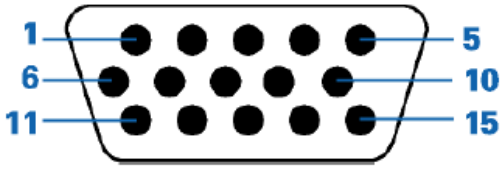
4. Input/Output Specification

4.1 Input Signal Connector

4.1.1 VGA Connector

Pin NO.	Description	Pin NO.	Description
1.	Red Video input	9.	DDC +5V
2.	Green Video input (SOG)	10.	Logic GND
3.	Blue Video input	11.	Ground
4.	Sense (GND)	12.	Serial data line (SDA)
5.	Cable Detect	13.	H.sync /H + V.sync
6.	Red Video Ground	14.	V.Sync
7.	Green Video Ground	15.	Data Clock Line (SCL)
8.	Blue Video Ground		

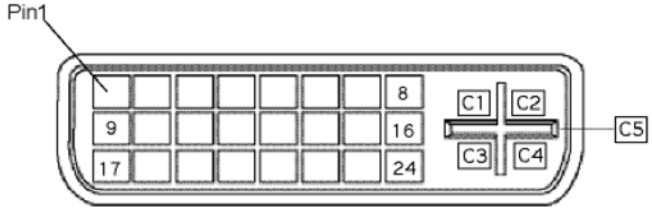
VGA Connector layout



4.1.2 DVI Connector

Pin NO.	Description	Pin NO.	Description
1.	T.M.D.S.Data2-	13.	No connect
2.	T.M.D.S.Data2+	14.	+ 5V Power
3.	T.M.D.S.Data2/4 Shield	15.	Ground (for +5V)
4.	No connect	16.	Hot Plug Detect
5.	No connect	17.	T.M.D.S.Data0-
6.	DDC Clock	18.	T.M.D.S.Data0+
7.	DDC Data	19.	T.M.D.S.Data0/5 Shield
8.	No connect	20.	No connect
9.	T.M.D.S.Data1-	21.	No connect
10.	T.M.D.S.Data1+	22.	T.M.D.S. Clock Shield
11.	T.M.D.S.Data1/3 Shield	23.	T.M.D.S. Clock +
12.	No connect	24.	T.M.D.S. Clock -

DVI Connector layout



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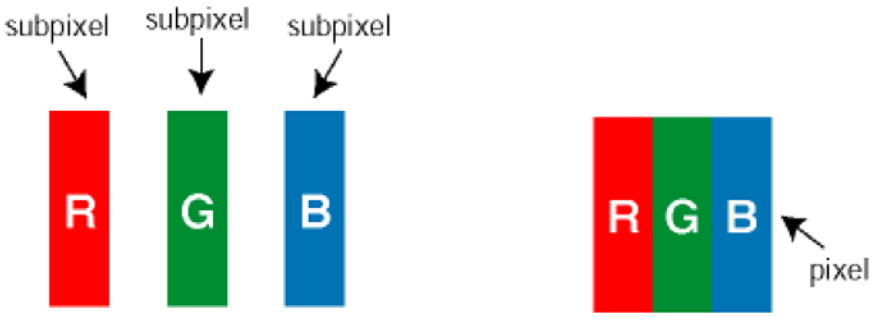
4.2 Factory Preset Display Modes

H. freq (kHz)	Resolution	V. freq (Hz)
31.469	720*400	70.087
31.469	640*480	59.940
37.861	640*480	72.809
37.500	640*480	75.000
35.156	800*600	56.250
37.879	800*600	60.317
48.077	800*600	72.188
46.875	800*600	75.000
48.363	1024*768	60.004
56.476	1024*768	70.069
60.023	1024*768	75.029
67.500	1152*870	75.000
60.000	1280*960	60.000
63.981	1280*1024	60.020
79.976	1280*1024	75.025
35.000	640*480	67.000
49.700	832*624	75.000

4.3 Pixel Defect Policy

Philips' Flat Panel Monitors Pixel Defect Policy

Philips strives to deliver the highest quality products. We use some of the industry's most advanced manufacturing processes and practice stringent quality control. However, pixel or sub pixel defects on the TFT LCD panels used in flat panel monitors are sometimes unavoidable. No manufacturer can guarantee that all panels will be free from pixel defects, but Philips guarantees that any monitor with an unacceptable number of defects will be repaired or replaced under warranty. This notice explains the different types of pixel defects and defines acceptable defect levels for each type. In order to qualify for repair or replacement under warranty, the number of pixel defects on a TFT LCD panel must exceed these acceptable levels. For example, no more than 0.0004% of the sub pixels on a 15" XGA monitor may be defective. Furthermore, Philips sets even higher quality standards for certain types or combinations of pixel defects that are more noticeable than others. This policy is valid worldwide.



Pixels and Sub pixels

A pixel, or picture element, is composed of three sub pixels in the primary colors of red, green and blue. Many pixels together form an image. When all sub pixels of a pixel are lit, the three colored sub pixels together appear as a single white pixel. When all are dark, the three colored sub pixels together appear as a single black pixel. Other combinations of lit and dark sub pixels appear as single pixels of other colors.

Types of Pixel Defects

Pixel and sub pixel defects appear on the screen in different ways. There are two categories of pixel defects and several types of sub pixel defects within each category.

Bright Dot Defects Bright dot defects appear as pixels or sub pixels that are always lit or 'on'. That is, a *bright dot* is a sub-pixel that stands out on the screen when the monitor displays a dark pattern. There are the types of bright dot defects:

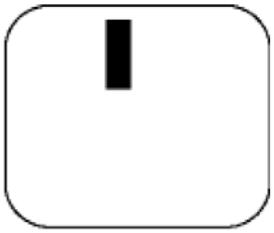
One lit red, green or blue sub pixel

Two adjacent lit sub pixels:
- Red + Blue = Purple
- Red + Green = Yellow
- Green + Blue = Cyan (Light Blue)

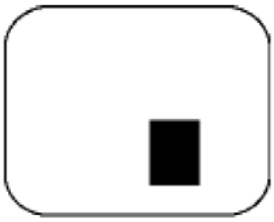
Three adjacent lit sub pixels (one white pixel)

A red or blue *bright dot* must be more than 50 percent brighter than neighboring dots while a green bright dot is 30 percent brighter than neighboring dots.

Black Dot Defects Black dot defects appear as pixels or sub pixels that are always dark or 'off'. That is, a *dark dot* is a sub-pixel that stands out on the screen when the monitor displays a light pattern. These are the types of black dot defects:



One dark sub pixel



Two or three adjacent dark sub pixels

Proximity of Pixel Defects

Because pixel and sub pixels defects of the same type that are near to one another may be more noticeable, Philips also specifies tolerances for the proximity of pixel defects.

Pixel Defect Tolerances

In order to qualify for repair or replacement due to pixel defects during the warranty period, a TFT LCD panel in a Philips flat panel monitor must have pixel or sub pixel defects exceeding the tolerances listed in the following tables.

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	**190V7**
1 lit subpixel	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	>25 mm
Total bright dot defects of all types	3

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	**190V7**
1 dark subpixel	5
2 adjacent dark subpixels	2
3 adjacent dark subpixels	0
Distance between two black dot defects*	>15 mm
Total black dot defects of all types	5

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	**190V7**
Total bright or black dot defects of all types	5

Note:

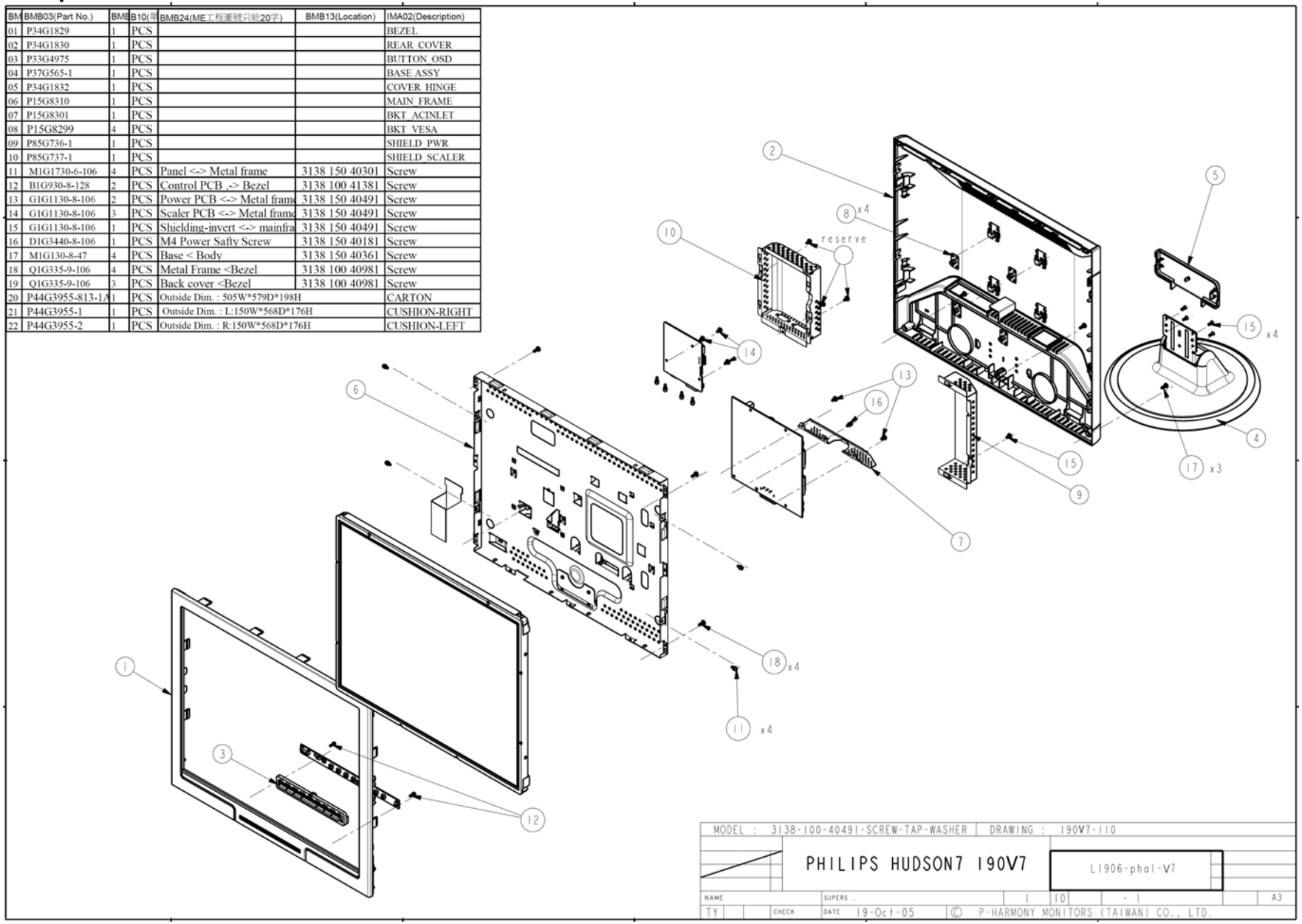
** 1 or 2 adjacent sub pixel defects = 1 dot defect*

Your Philips monitor is ISO13406-2 Compliant

5. Block Diagram

5.1 Monitor Exploded View

BM	BMB03(Part No.)	BMB	B10(單	BMB24(ME工程圖號只能20字)	BMB13(Location)	IMA02(Description)
01	P34G1829	1	PCS			BEZEL
02	P34G1830	1	PCS			REAR_COVER
03	P33G4975	1	PCS			BUTTON_OSD
04	P37G565-1	1	PCS			BASE ASSY
05	P34G1832	1	PCS			COVER_HINGE
06	P15G8310	1	PCS			MAIN_FRAME
07	P15G8301	1	PCS			BKT_ACINLET
08	P15G8299	4	PCS			BKT_VESA
09	P85G736-1	1	PCS			SHIELD_PWR
10	P85G737-1	1	PCS			SHIELD_SCALER
11	M1G1730-6-106	4	PCS	Panel <-> Metal frame	3138 150 40301	Screw
12	B1G930-8-128	2	PCS	Control PCB ,-> Bezel	3138 100 41381	Screw
13	G1G1130-8-106	2	PCS	Power PCB <-> Metal frame	3138 150 40491	Screw
14	G1G1130-8-106	3	PCS	Scaler PCB <-> Metal frame	3138 150 40491	Screw
15	G1G1130-8-106	1	PCS	Shielding-invert <-> mainfra	3138 150 40491	Screw
16	D1G3440-8-106	1	PCS	M4 Power Safty Screw	3138 150 40181	Screw
17	M1G130-8-47	4	PCS	Base < Body	3138 150 40361	Screw
18	Q1G335-9-106	4	PCS	Metal Frame <Bezel	3138 100 40981	Screw
19	Q1G335-9-106	3	PCS	Back cover <Bezel	3138 100 40981	Screw
20	P44G3955-813-1A	1	PCS	Outside Dim. : 505W*579D*198H		CARTON
21	P44G3955-1	1	PCS	Outside Dim. : L:150W*568D*176H		CUSHION-RIGHT
22	P44G3955-2	1	PCS	Outside Dim. : R:150W*568D*176H		CUSHION-LEFT



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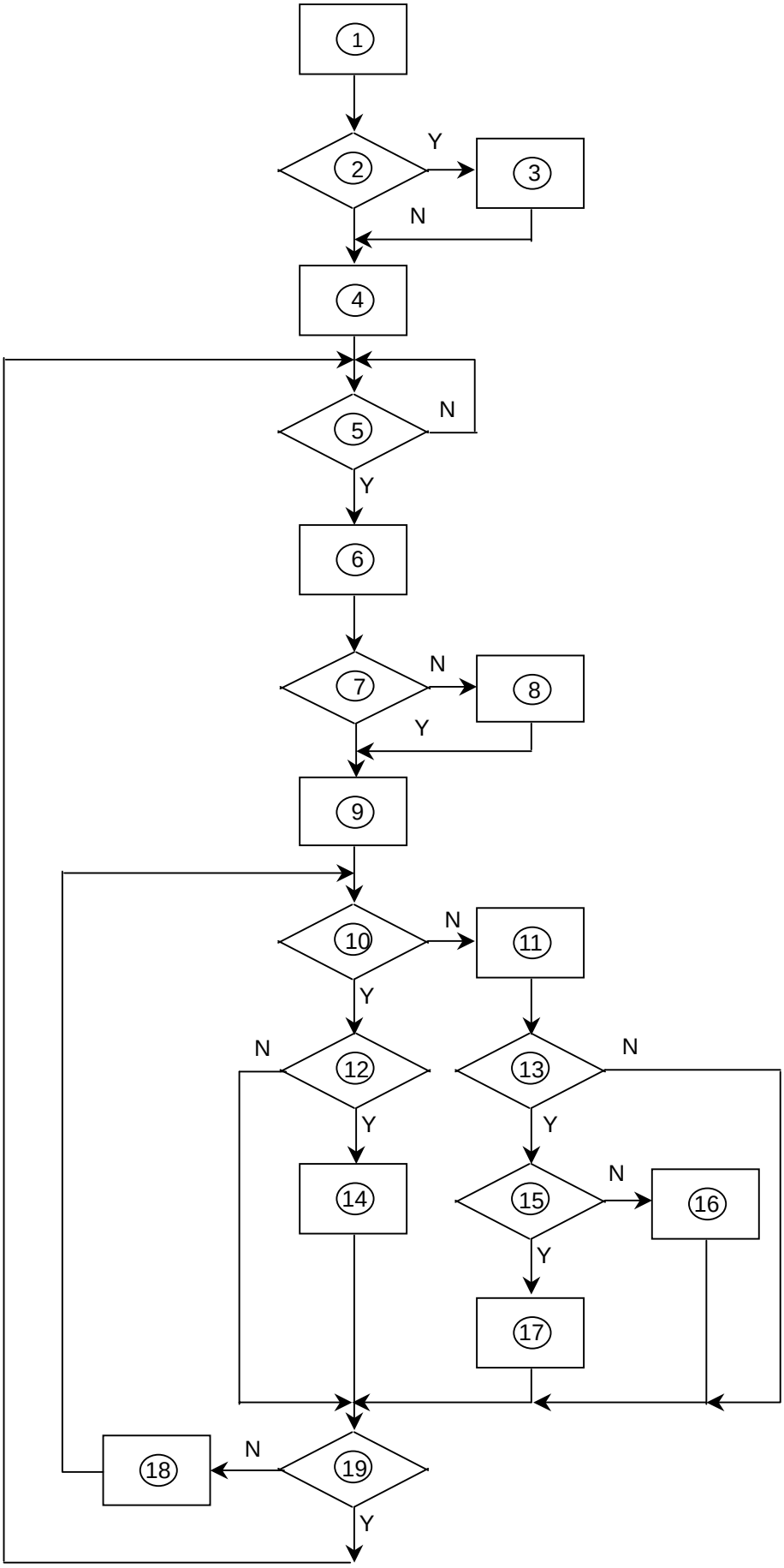
5.2 Software Flow Chart



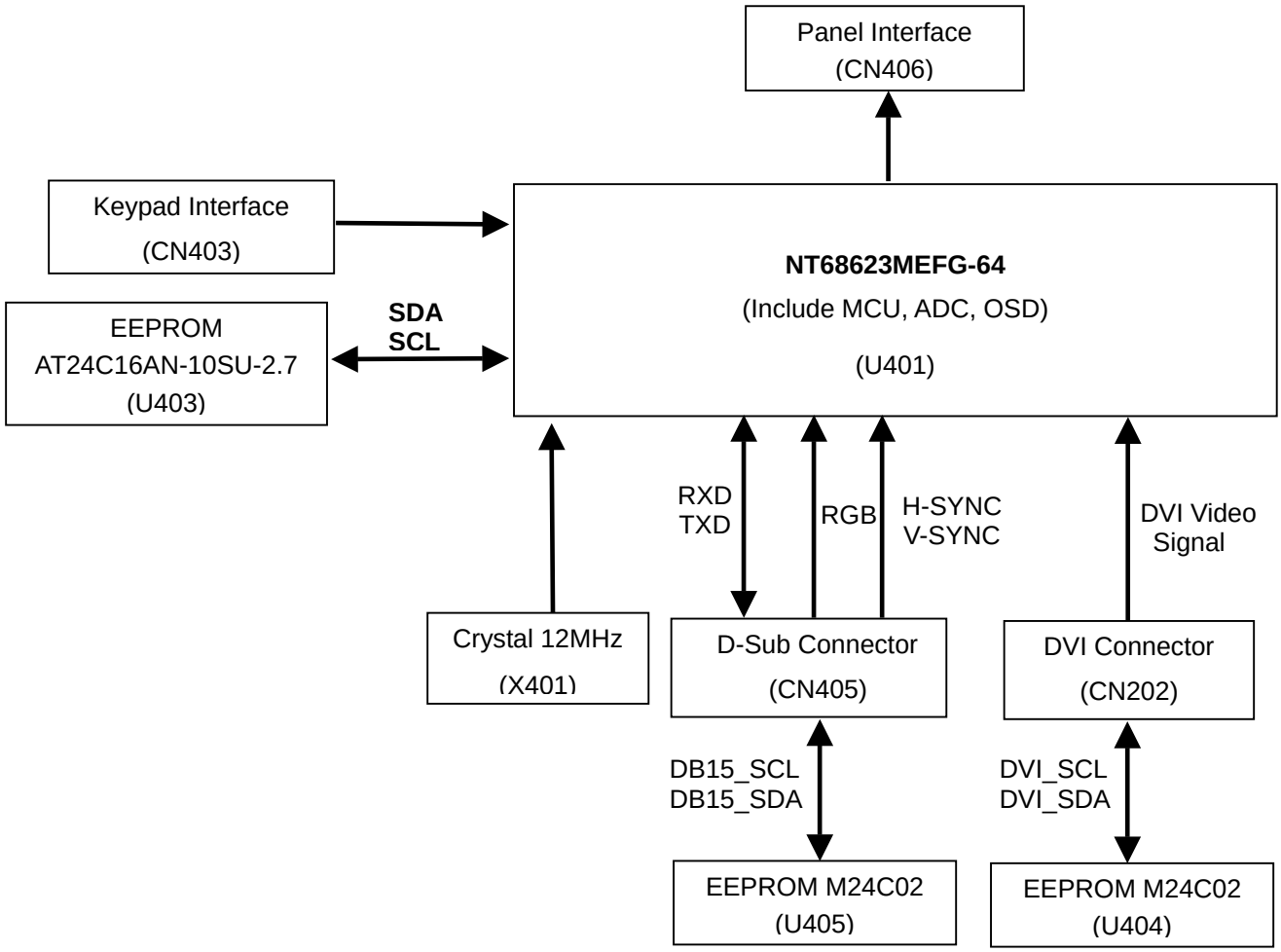
1) MCU Initializes.
2) Is the EEprom blank?
3) Program the EEprom by default values.
4) Get the PWM value of brightness from EEprom.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode.
9) Save the power key status into EEprom.

Turn on the LED and set it to green color. Scalar initializes.

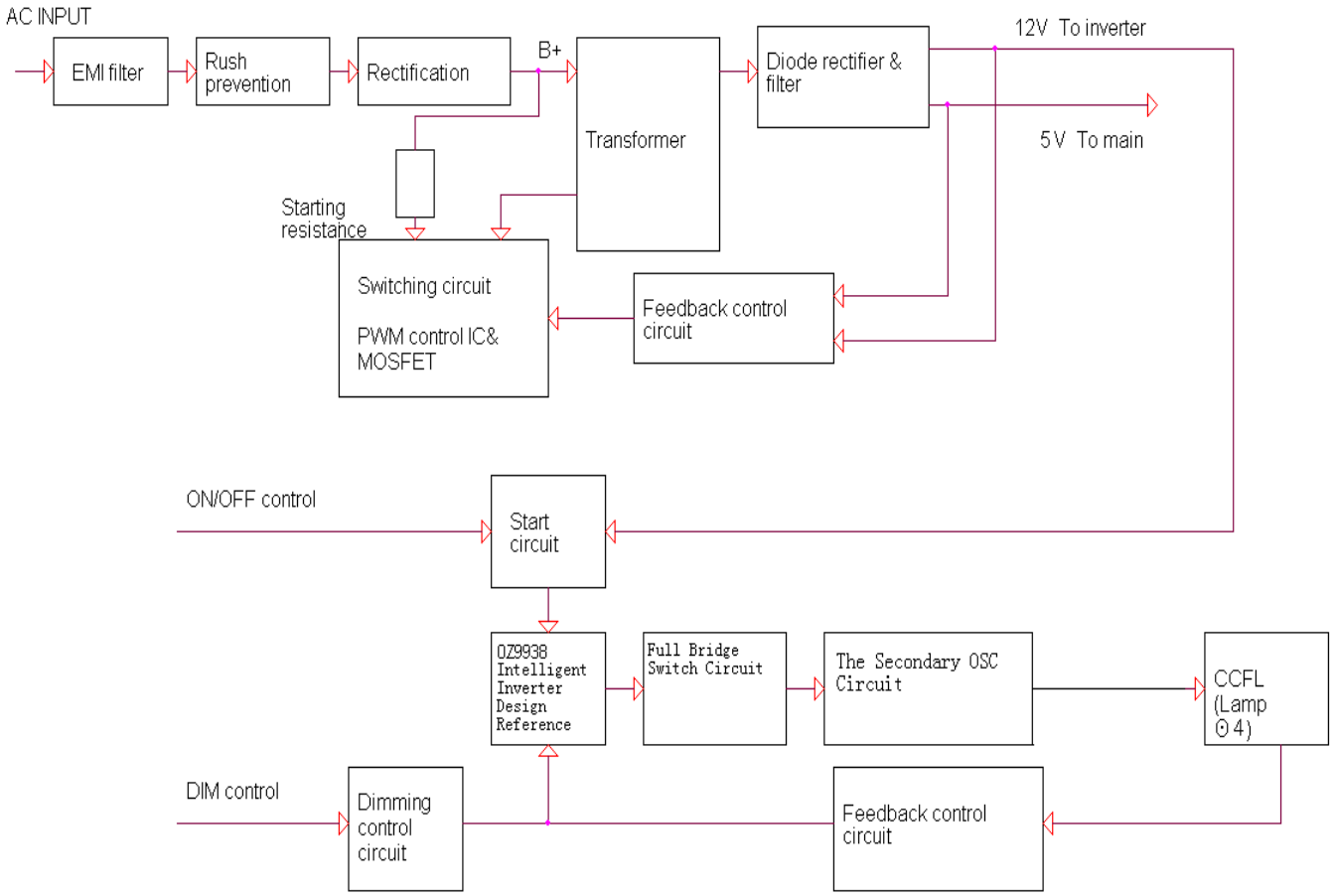
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog port, are there any signals coming?
13) Does the scalar send out an interrupt request?
14) Wake up the scalar.
15) Are there any signals coming from analog port?
16) Display "No connection Check Signal Cable" message. And go into standby mode after the message disappears.
17) Program the scalar to be able to show the coming mode.
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

5.3 Electrical Block Diagram

5.3.1 Main Board



5.3.2 Inverter/Power Board



6. Schematic Diagram

6.1 Main Board

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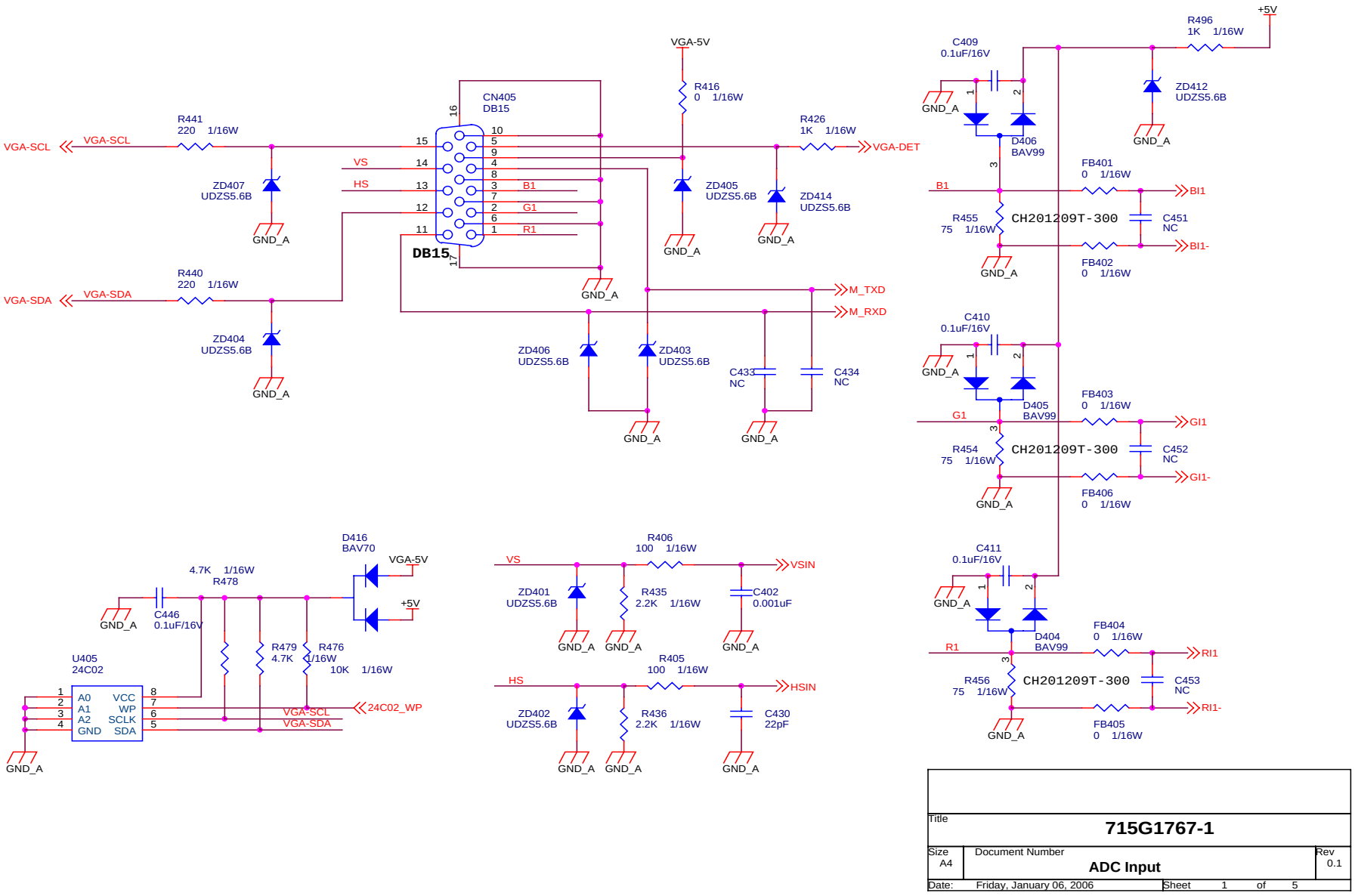

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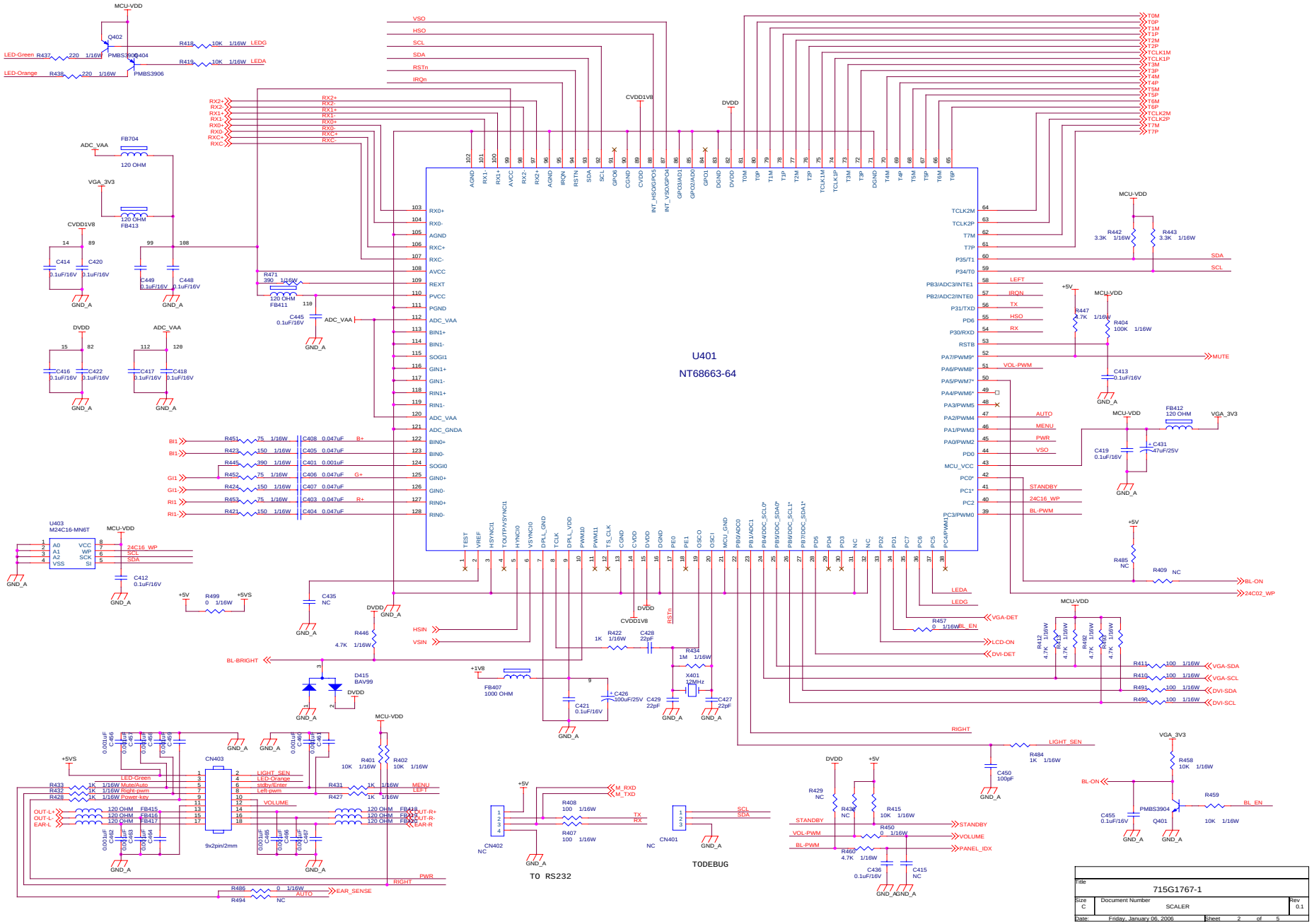
Size A4	Document Number ADC Input	Rev 0.1
Date: Friday, January 06, 2006	Sheet 1 of 5	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Rev 0.1
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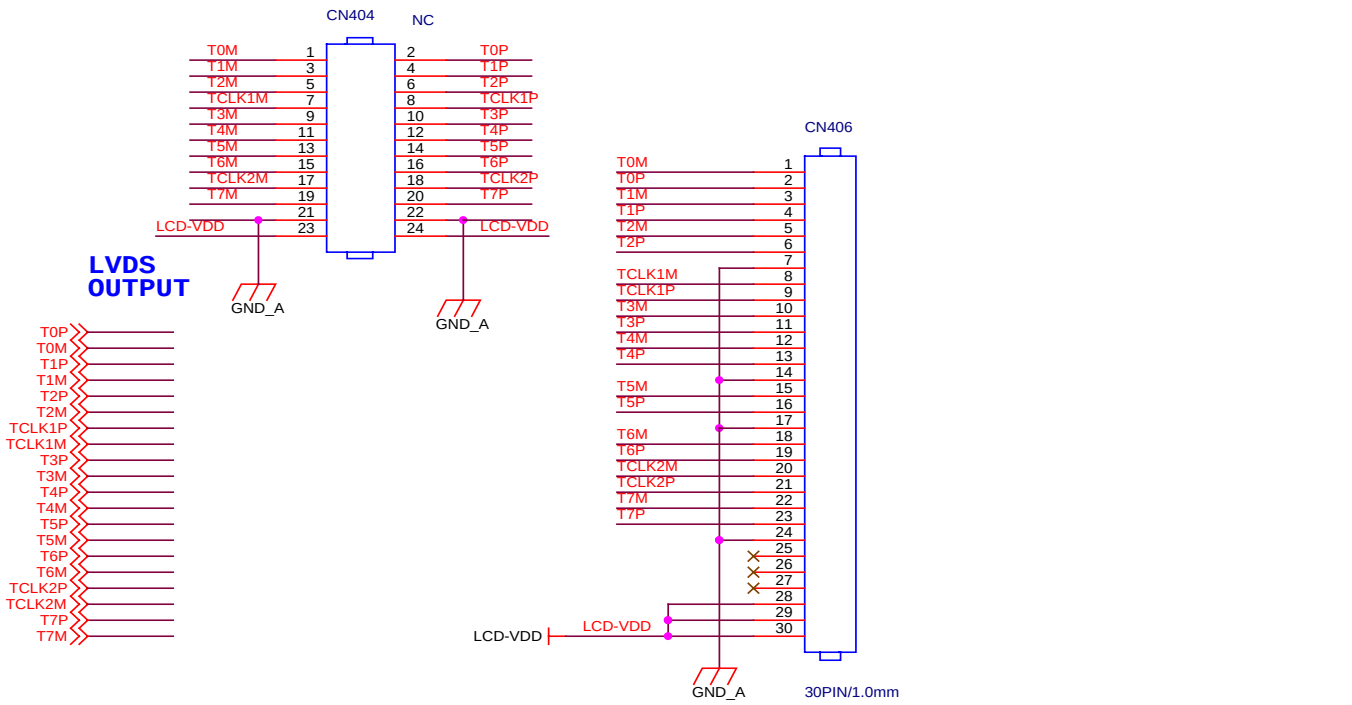

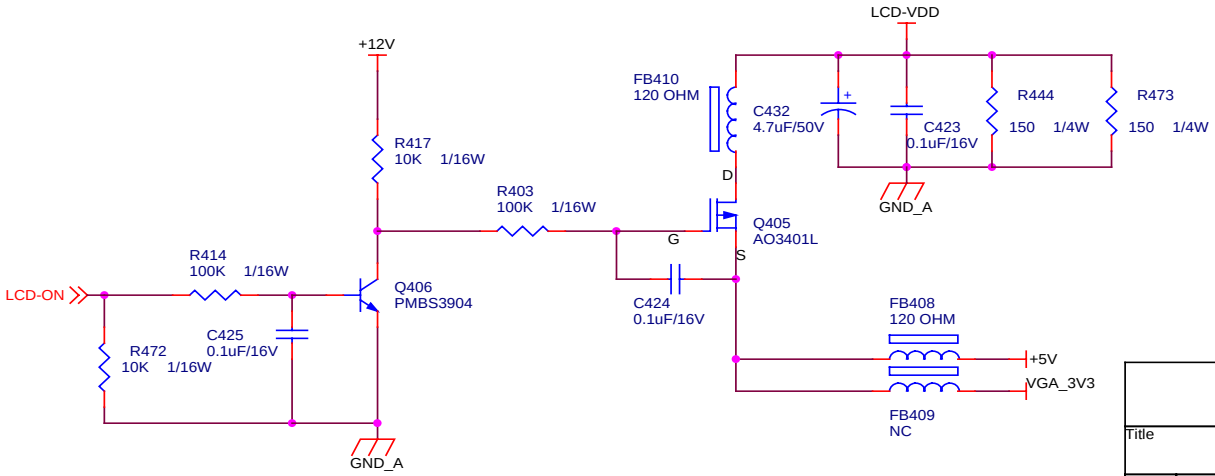

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Date: Friday, January 06, 2006	Sheet 3 of 5	

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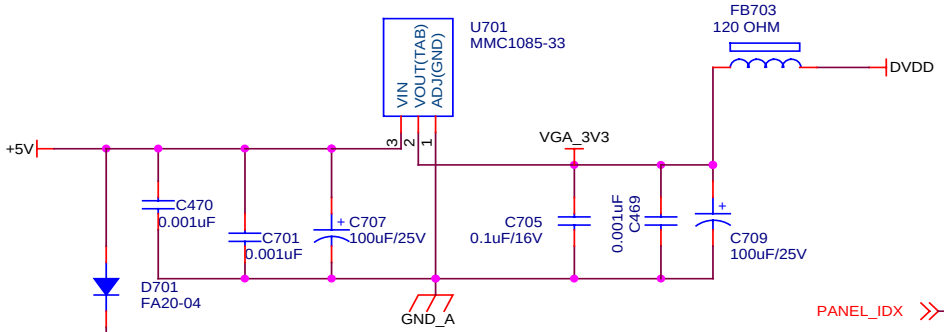
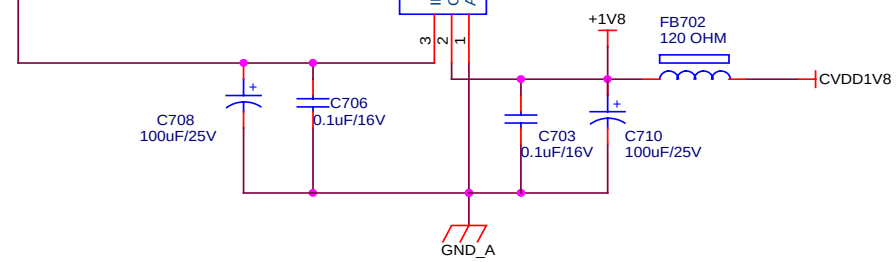
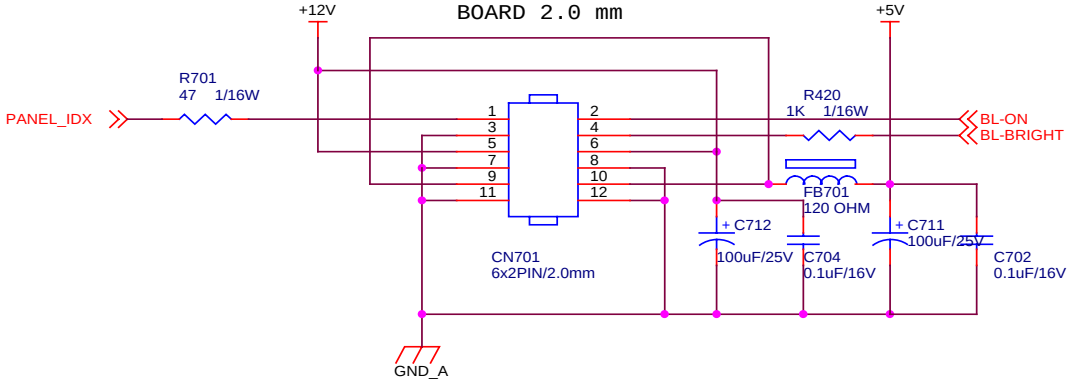


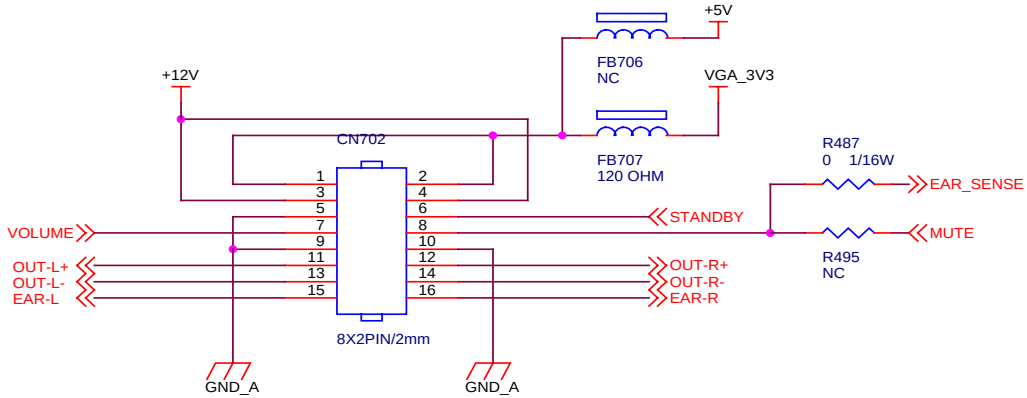
FOR 3.3V POWER USE



FOR 1.8V POWER USE

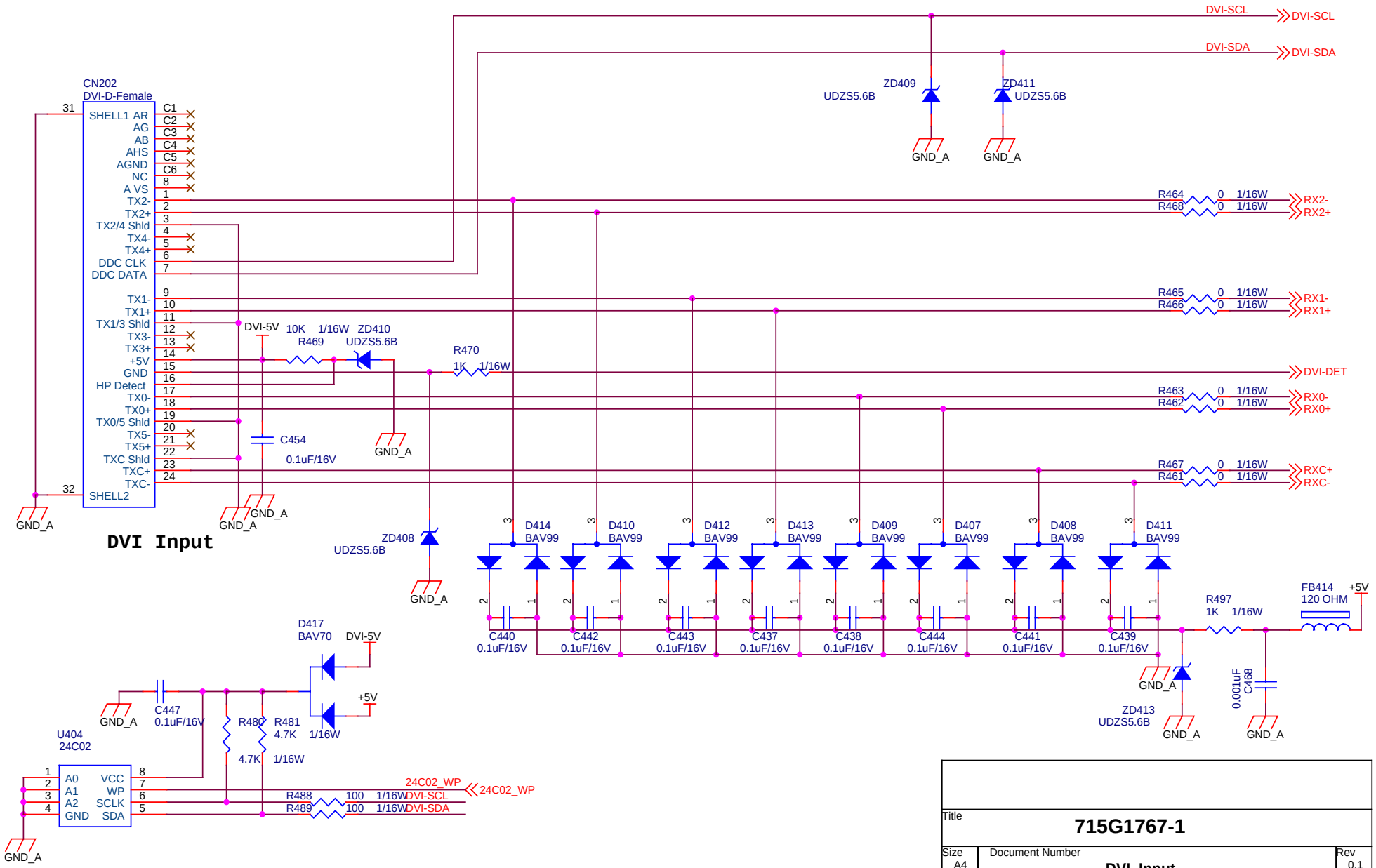
CONNECTOR FOR
POWER/INVERTER
BOARD 2.0 mm





Title	715G1767-1	
Size A4	Document Number Scaler Power	Rev 0.1
Date: Friday, January 06, 2006	Sheet 4 of 5	

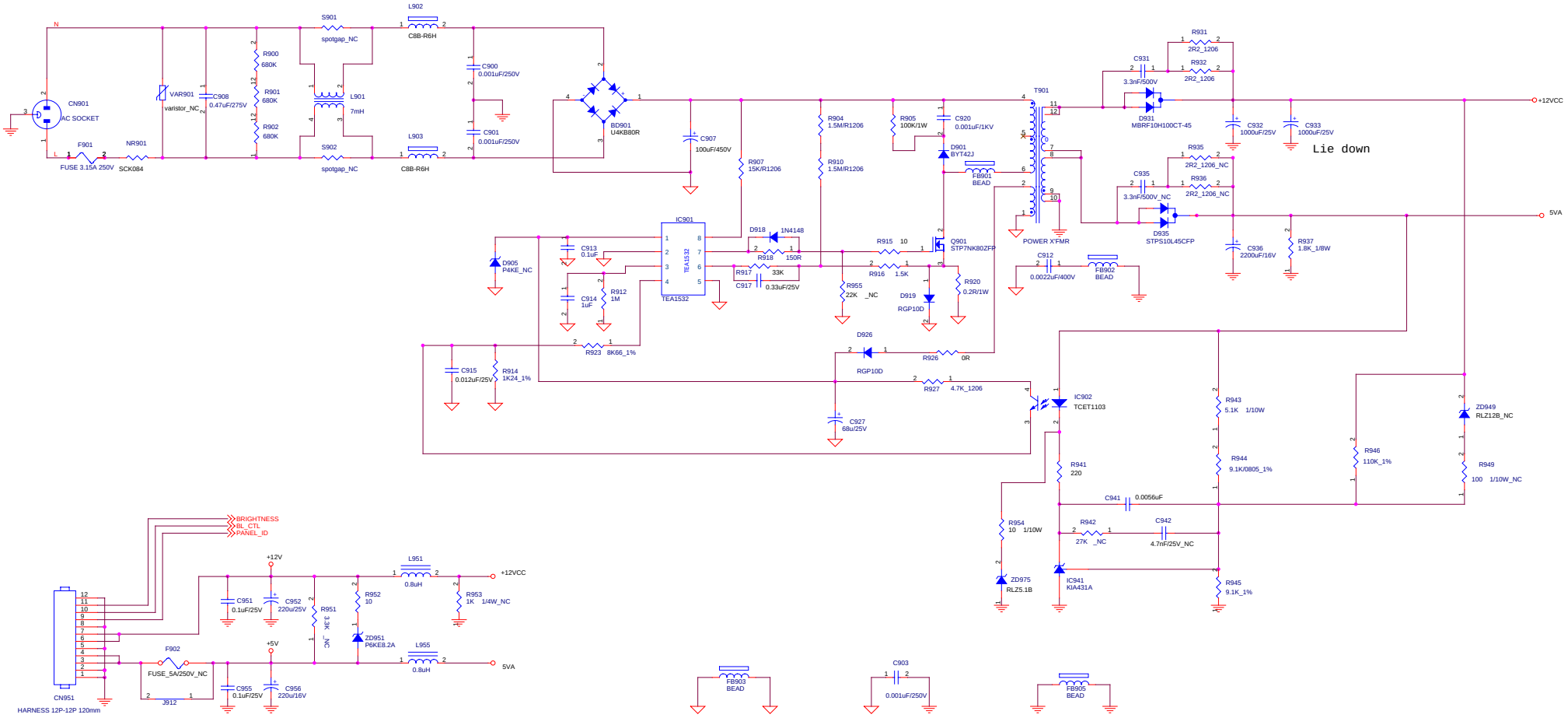
飛利浦 PHILIPS PHILIPS

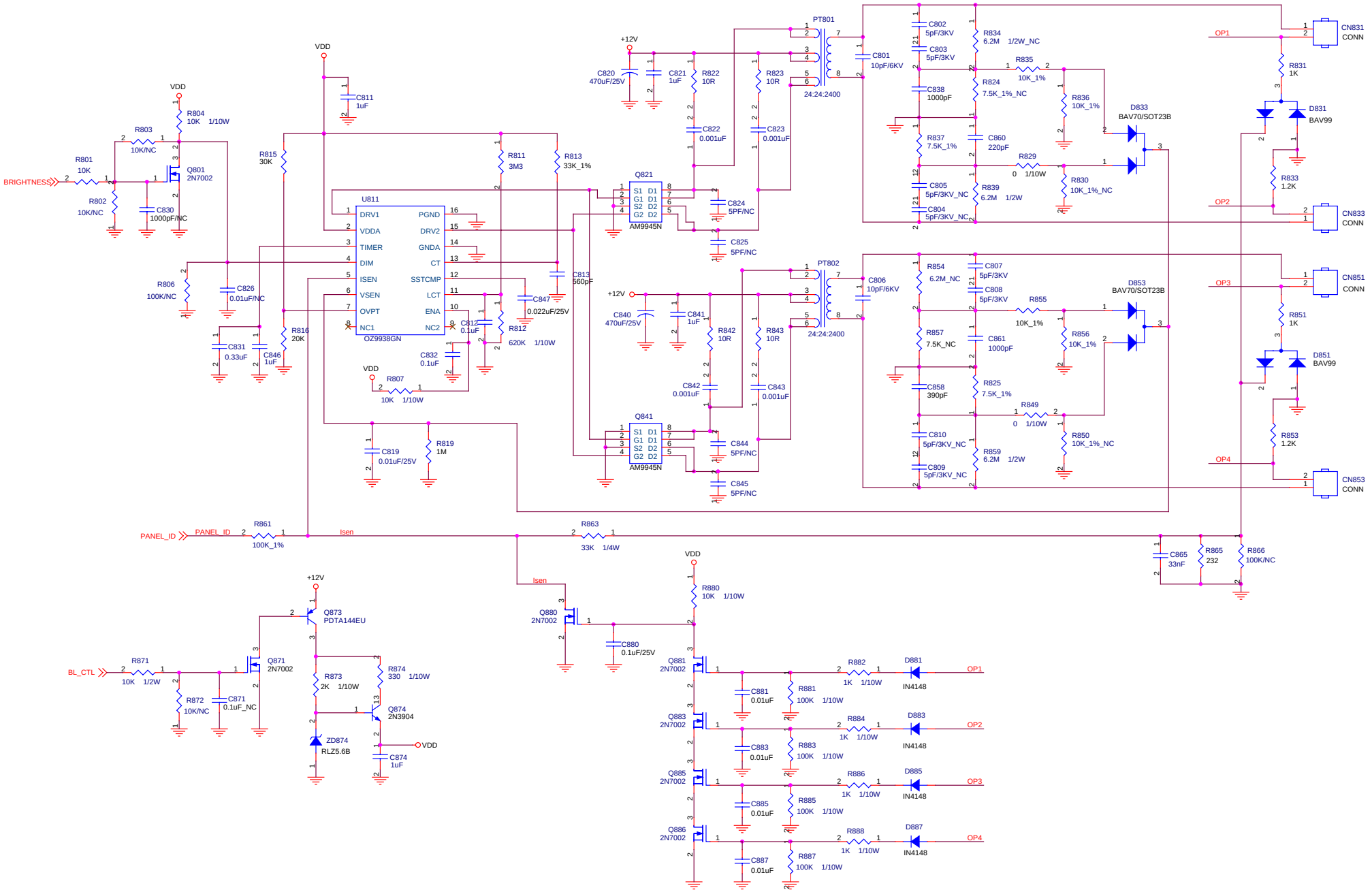


Title	715G1767-1	
Size A4	Document Number DVI Input	Rev 0.1
Date: Friday, January 06, 2006	Sheet 5 of 5	

6.2 Power Board

715G1813-1

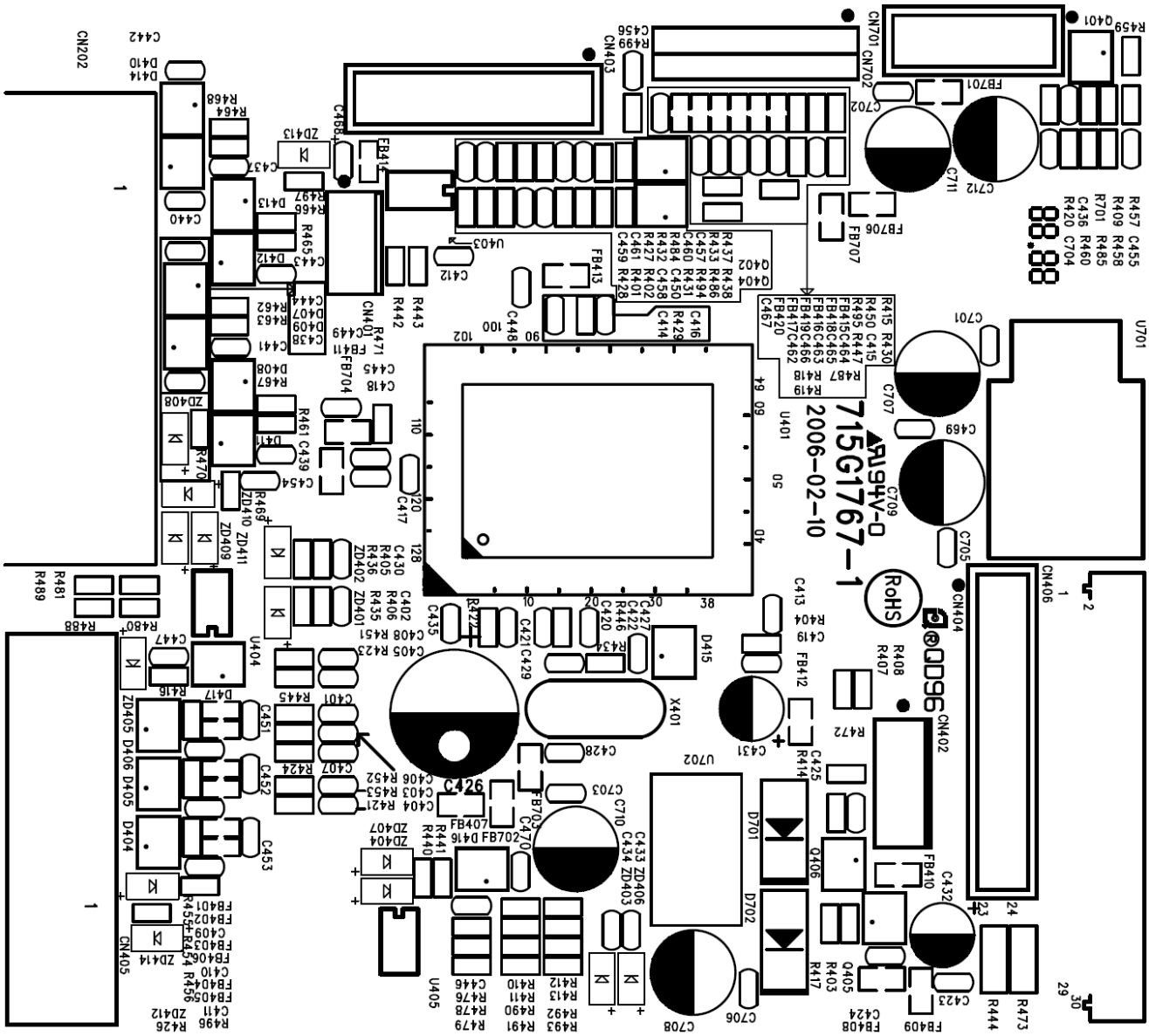


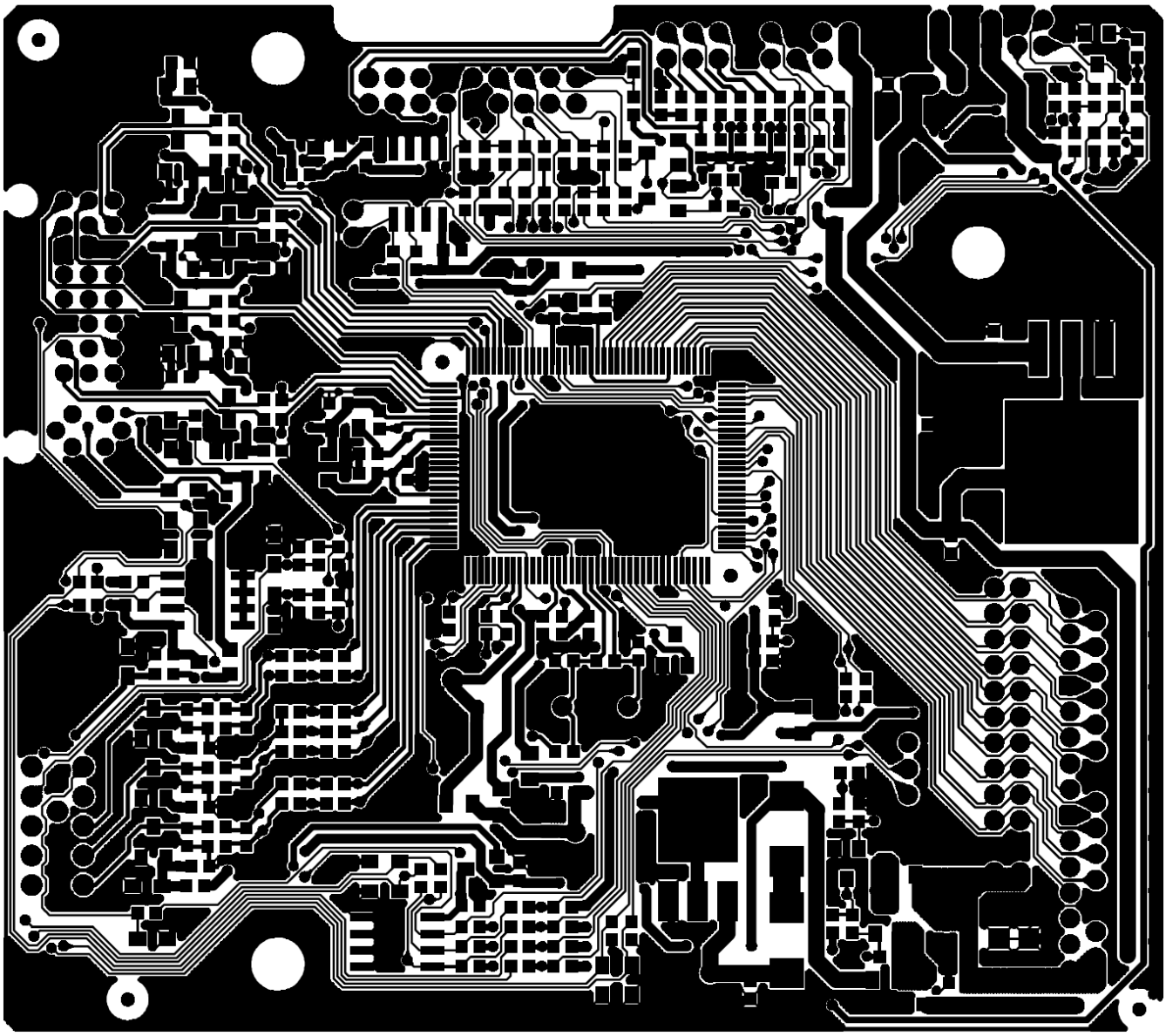

VDD
+12V
BRIGHTNESS
PANEL_ID
BL_CTL
Isen
U811
OZ9938GN
DRV1
VDDA
TIMER
DIM
ISEN
VSEN
OVPT
NC1
PGND
DRV2
GNDA
CT
SSTCMP
LCT
ENA
NC2
PT801
PT802
24:24:2400
Q821
Q841
AM9945N
Q873
PDTA144EU
Q874
2N3904
ZD874
RLZ5.6B
Q880
2N7002
Q881
Q883
Q885
Q886
D831
D833
D851
D853
BAV99
BAV70/SOT23B
D881
D883
D885
D887
IN4148
CN831
CN833
CN851
CN853
CONN
OP1
OP2
OP3
OP4

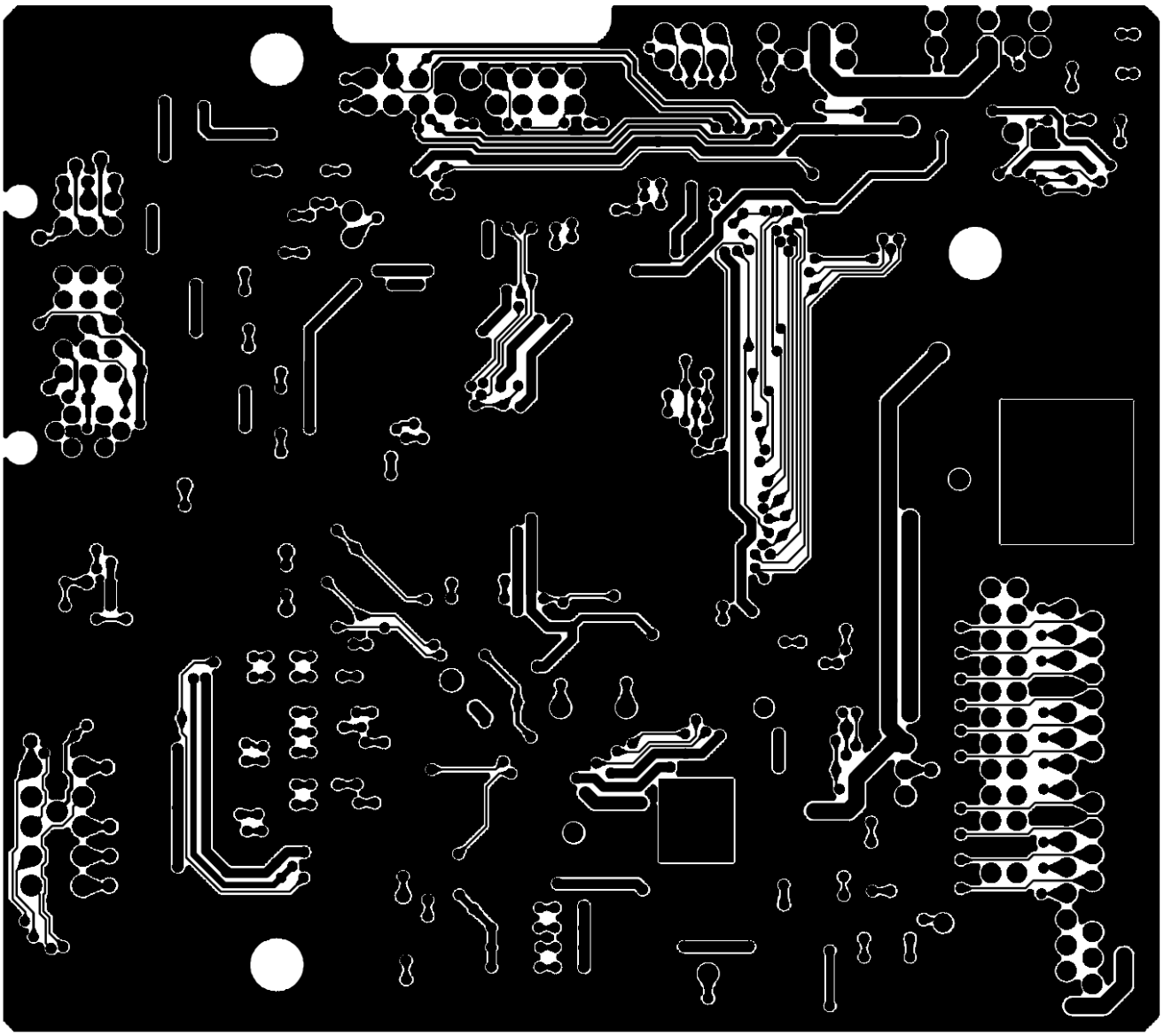
7. PCB Layout

7.1 Main Board

715G1767- 1

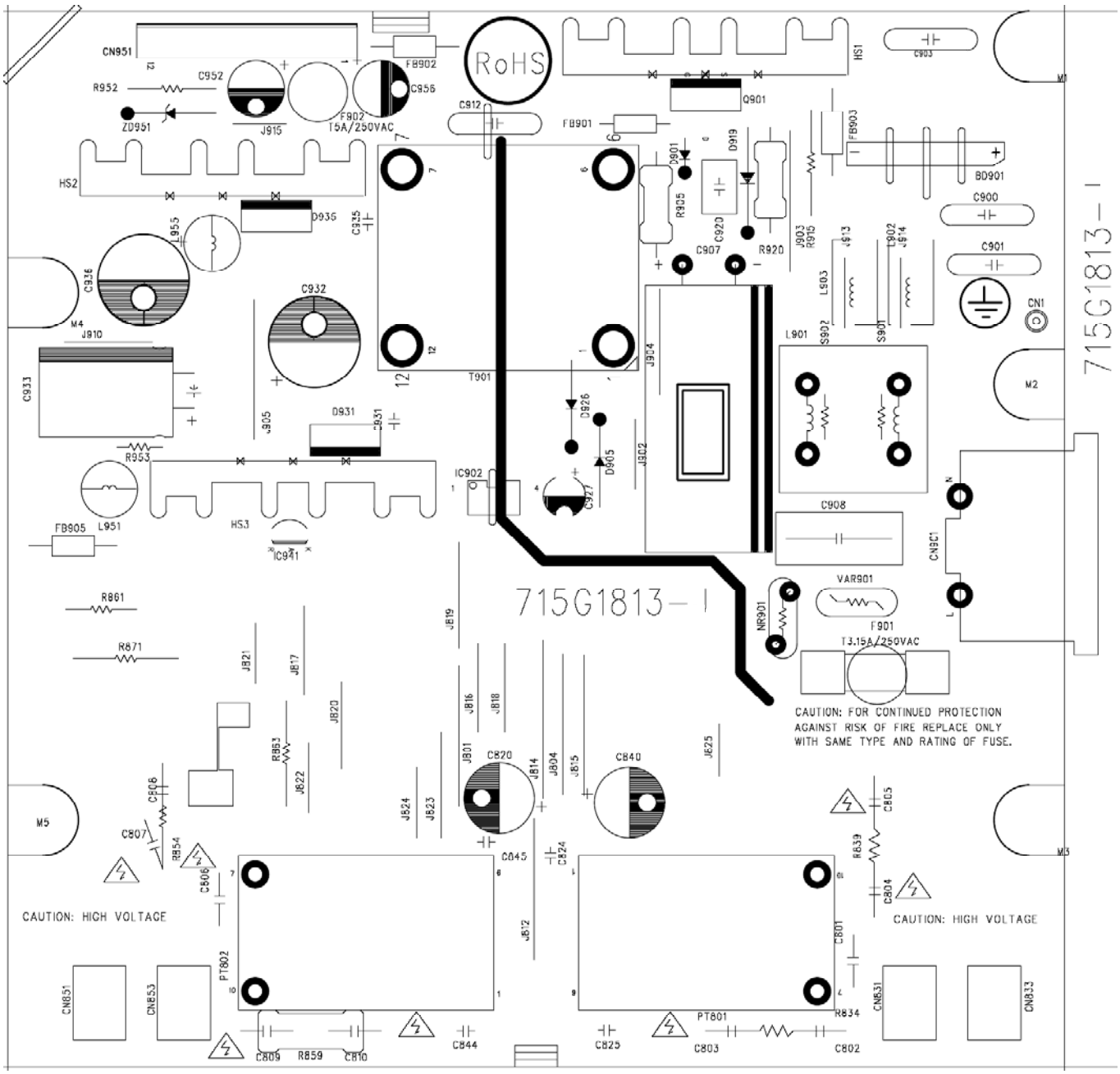


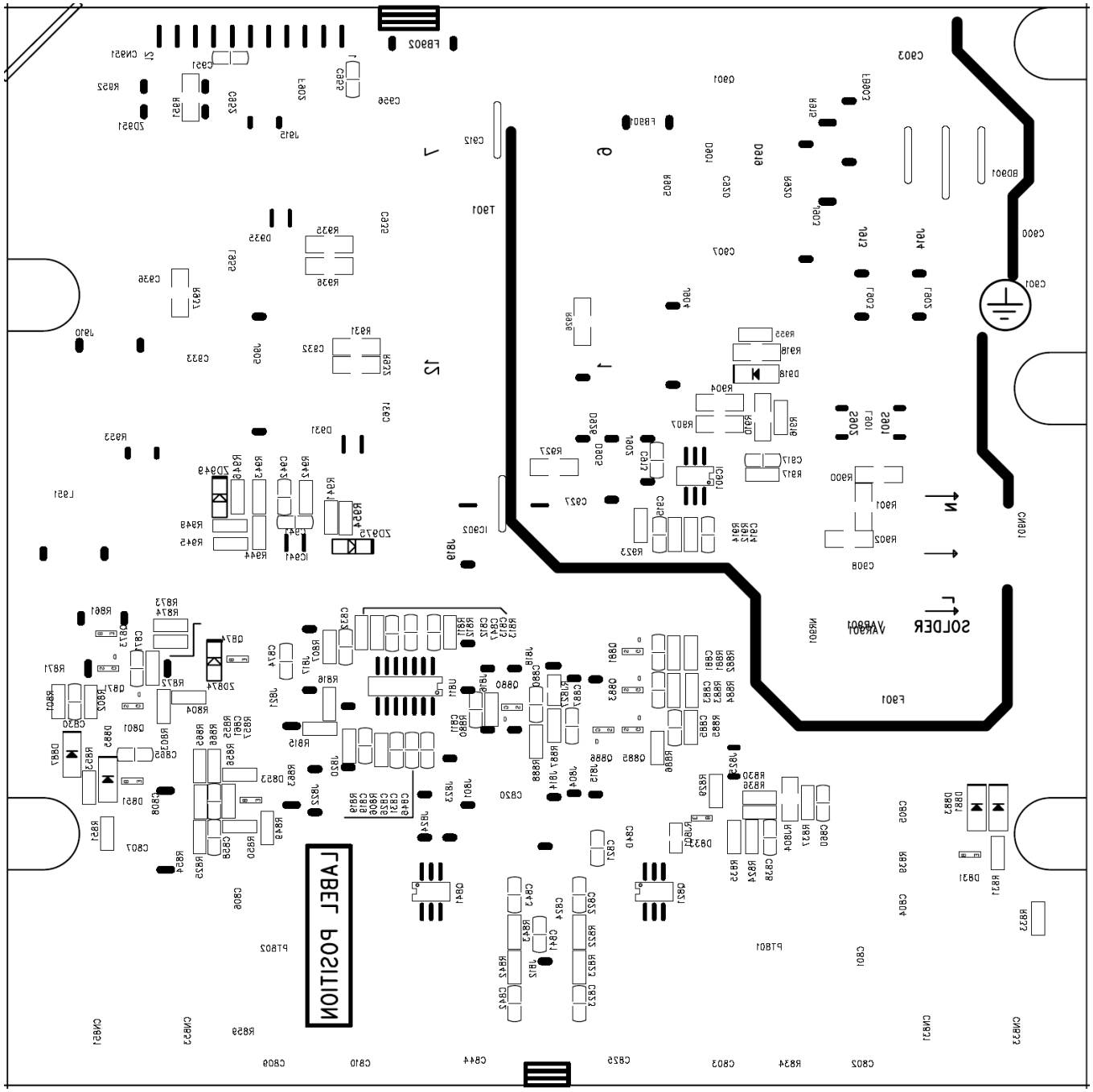


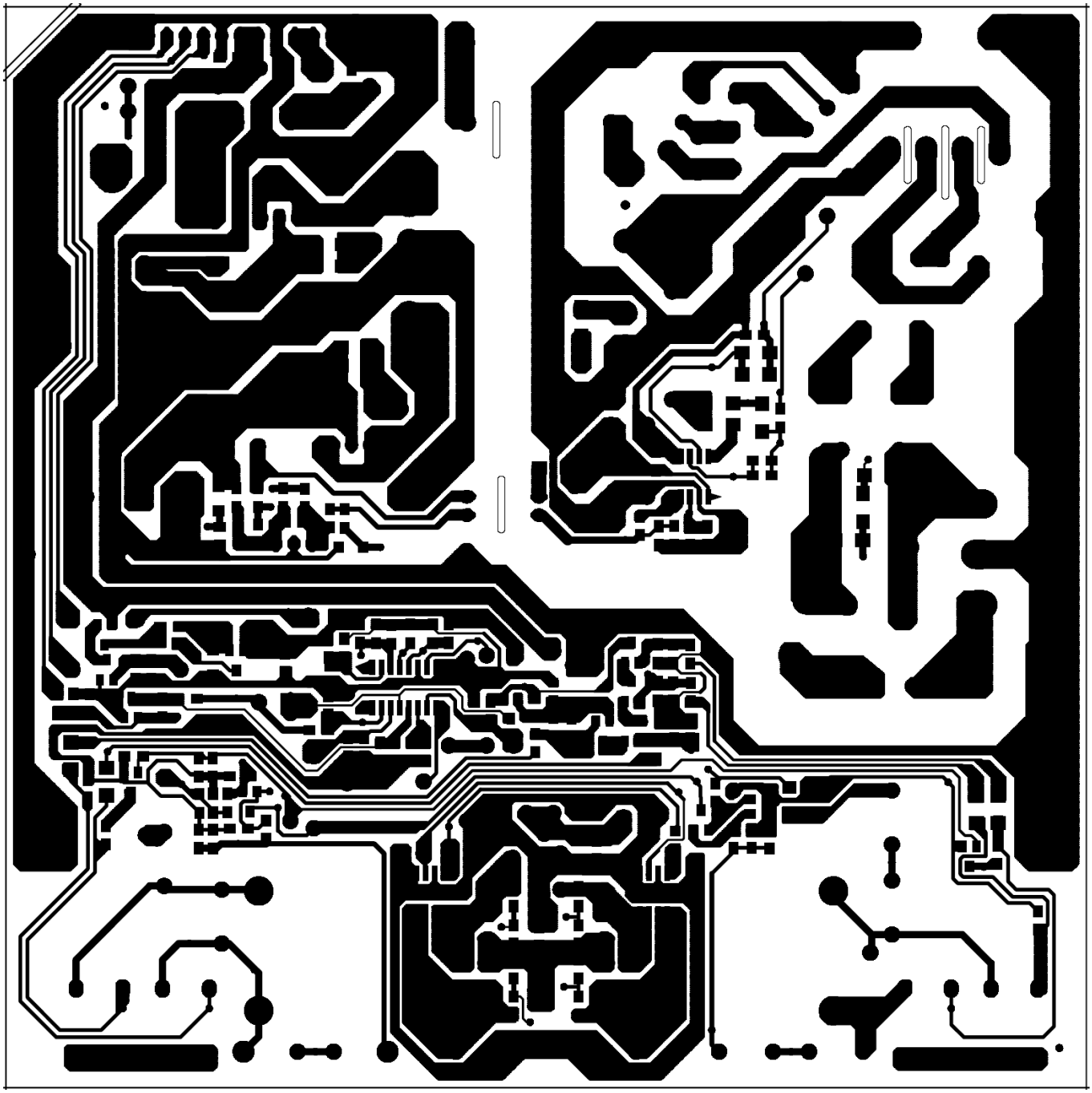


7.2 Power Board

715G1813-1

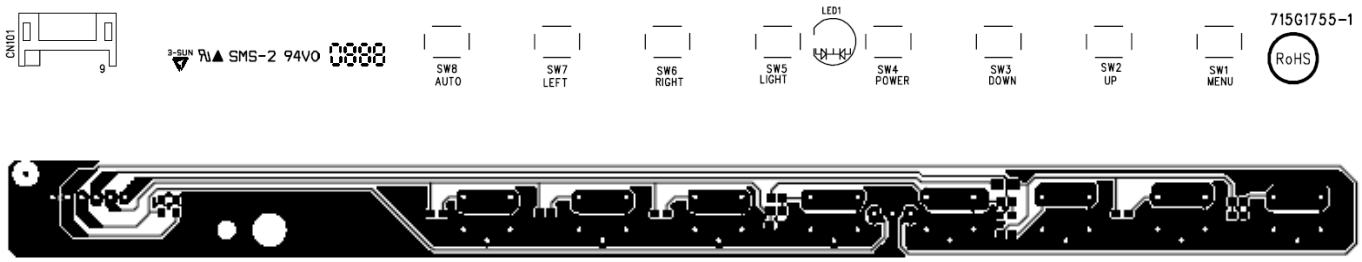



LABEL POSITION
SOLDER

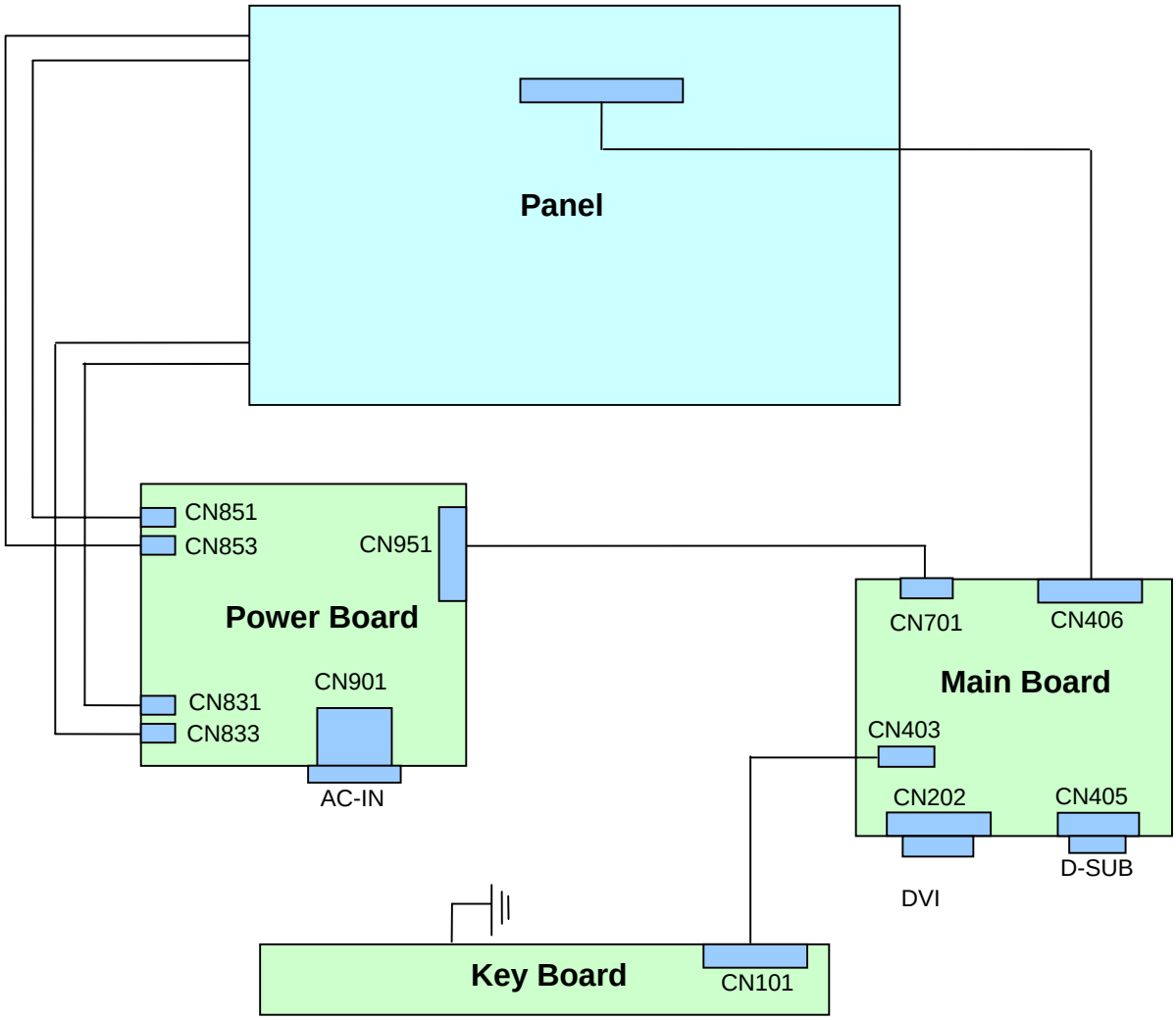


7.3 Key Board

715G1755-1



8. Wiring Diagram



9. Mechanical Instructions

1. Back View as Fig.1

Fig.1

2. Remove base as Fig.2- Fig.3

a. Remove 1 screw for hinge cover as Fig.2

b. Remove 5 screws for base as Fig.3

Fig.2

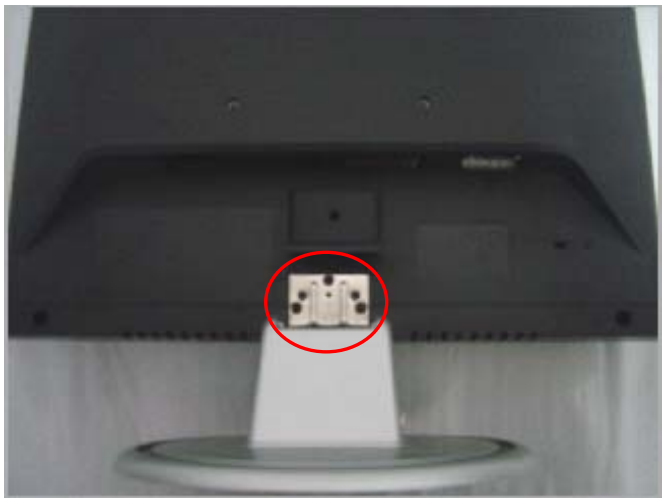


Fig.3

3. Remove rear cover as Fig.4- Fig.6

a. Remove 2 screws for back cover as Fig.4

b. Using the “1” type screwdriver to open the 3 clicks on bottom side as Fig.5

Fig.4

Fig.5

Fig.6

4. Remove shield as Fig.7

Remove 6 screws as Fig.7

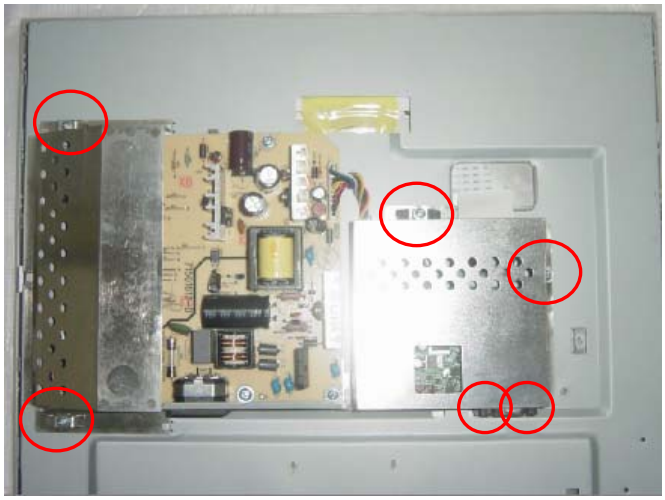


Fig.7

5. Remove main and Power board as Fig.8

Remove 13 screws for main and Power board as Fig.8

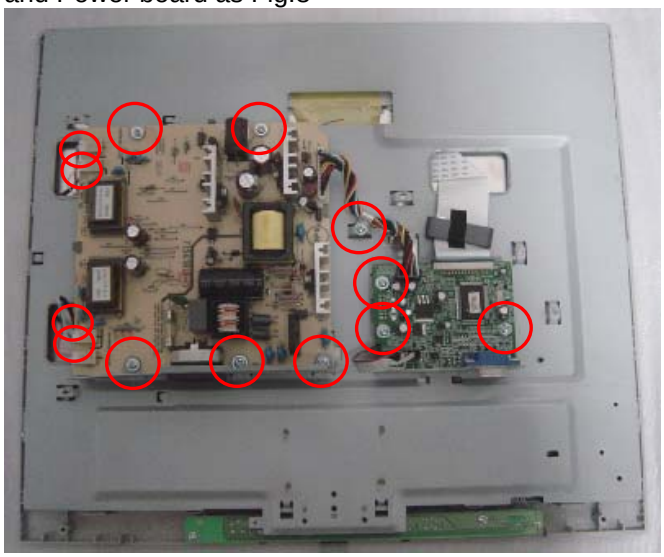


Fig.8

6. Remove the bezel as Fig.9- Fig.11

a. Remove 2 screws at the right of bezel as Fig.9
b. Remove 2 screws at the left of bezel as Fig.10
c. Remove connect wire between main and key board as Fig.11

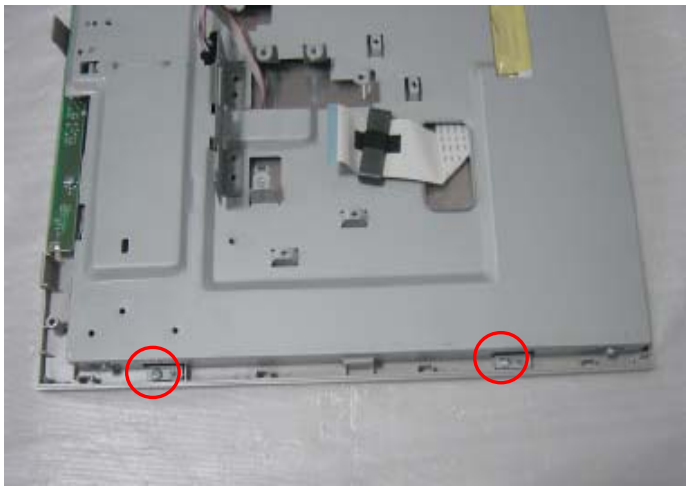


Fig.9

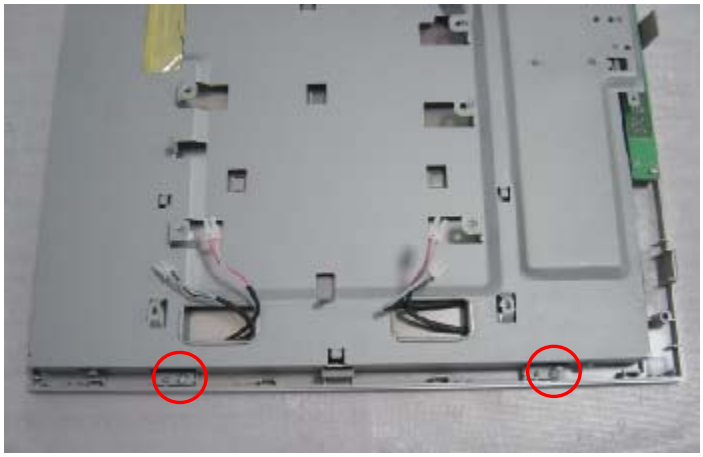


Fig.10

Fig.11

7. Remove the main frame as Fig.12- Fig.14

a. Remove 2 screws at the right of main frame Fig.12

b. Remove 2 screws at the left of main frame Fig.13

Fig.12

Fig.13

Fig.14

10. Trouble Shooting

This page deals with problems that can be corrected by a user. If the problem still persists after you have tried these solutions, contact Philips customer service representative.

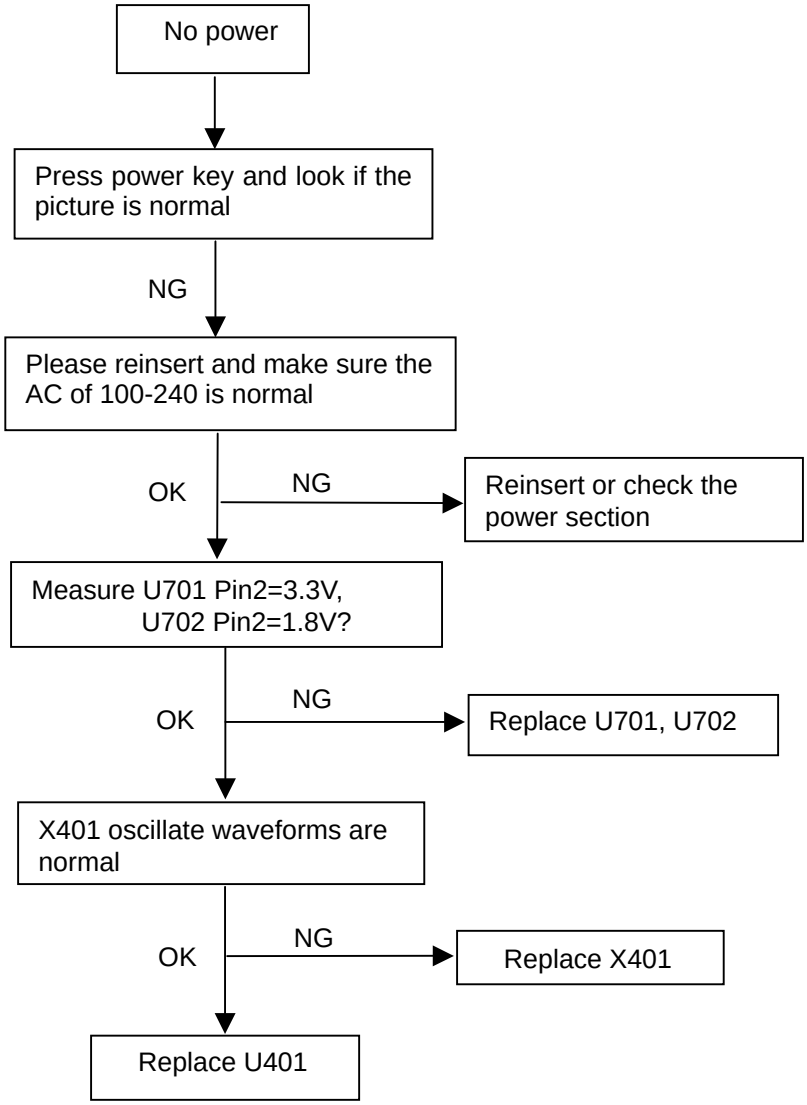
Common Problems	
Having this problem	Check these items
No Picture (Power LED not lit)	• Make sure the power cord is plugged into the power outlet and into the back of the monitor. • First, ensure that the power button on the front of the monitor is in the OFF position, then press it to the ON position.
No Picture (Power LED is amber or yellow)	• Make sure the computer is turned on. • Make sure the VGA cable is properly connected to your computer. • Check to see if the monitor cable has bent pins. • The Energy Saving feature may be activated
Screen says 	• Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide). • Check to see if the monitor cable has bent pins. • Make sure the computer is turned on.
AUTO button not working properly	• The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows. • It may not work properly if using nonstandard PC or video card.
Imaging Problems	
Display position is incorrect	• Press the Auto button. • Adjust the image position using the Phase/Clock of More Settings in OSD Main Controls.
Image vibrates on the screen	• Check that the VGA cable is properly connected to the graphics board or PC.

Vertical flicker appears 	• Press the Auto button. • Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls.
Horizontal flicker appears  	• Press the Auto button. • Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls.
The screen is too bright or too dark	• Adjust the contrast and brightness on On-Screen Display. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your sales representative).
An after-image appears	• If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an after-image. This usually disappears after a few hours
An after-image remains after the power has been turned off.	• This is characteristic of liquid crystal and is not caused by a malfunction or deterioration of the liquid crystal. The after-image will disappear after a peroid of time.
Green, red, blue, dark, and white dots remains	• The remaining dots are normal characteristic of the liquid crystal used in today’s technology.
For further assistance, refer to the Consumer Information Centers list and contact Philips customer service representative.	

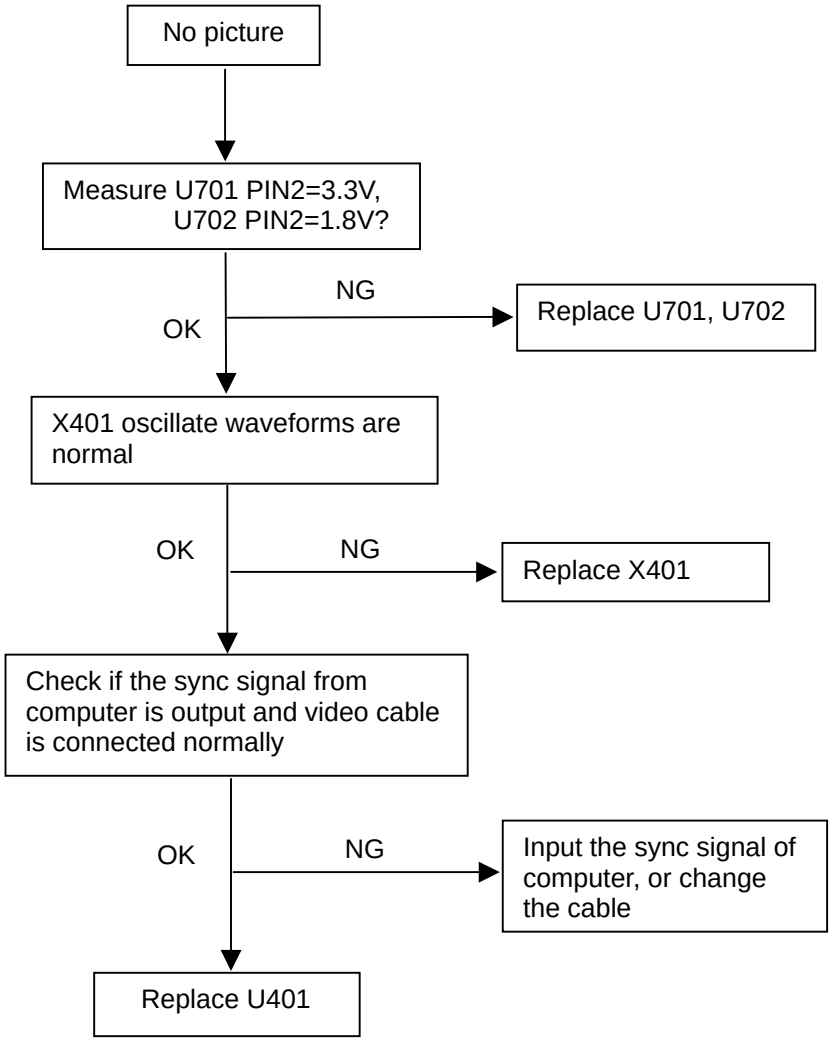
RETURN TO TOP OF THE PAGE

11. Repair Flow Chart

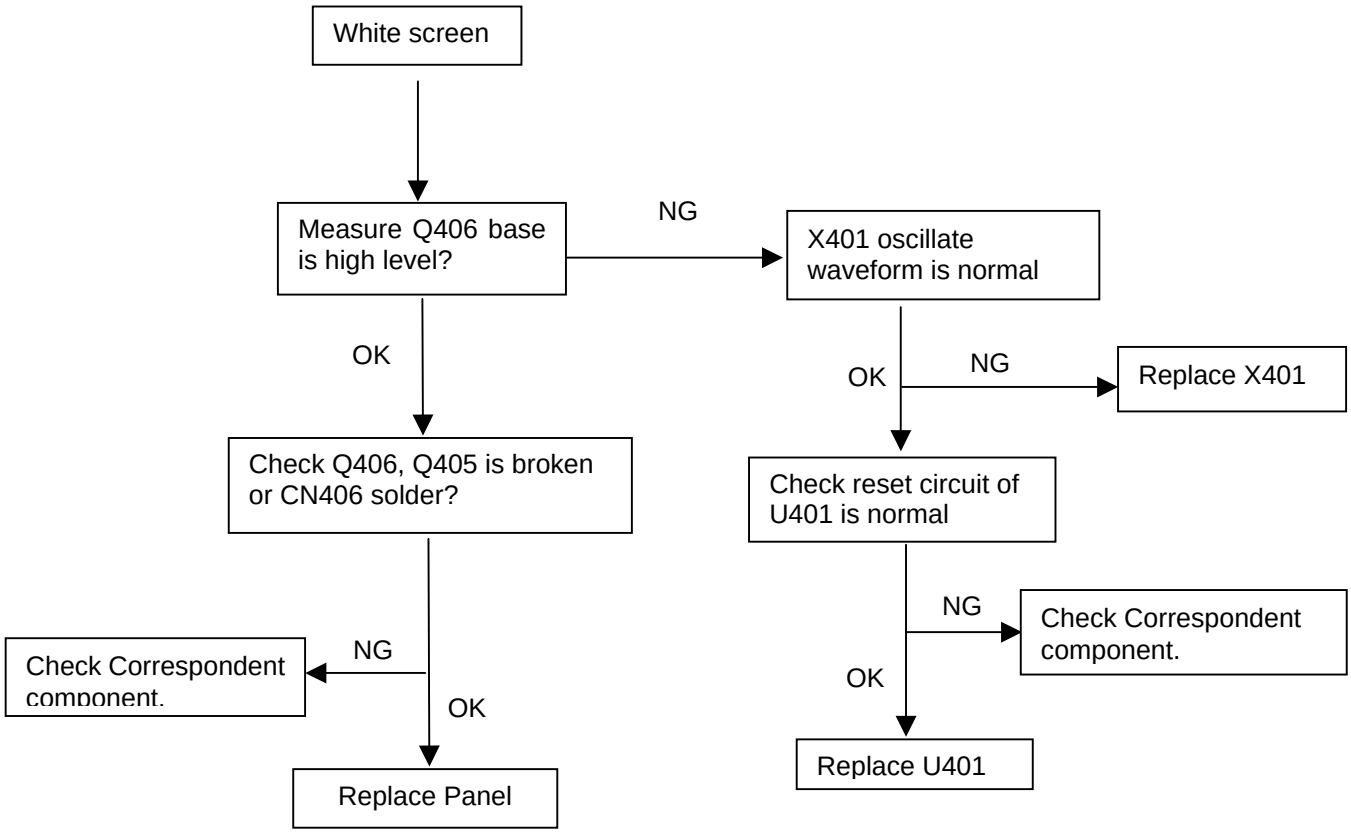
(1). No Power



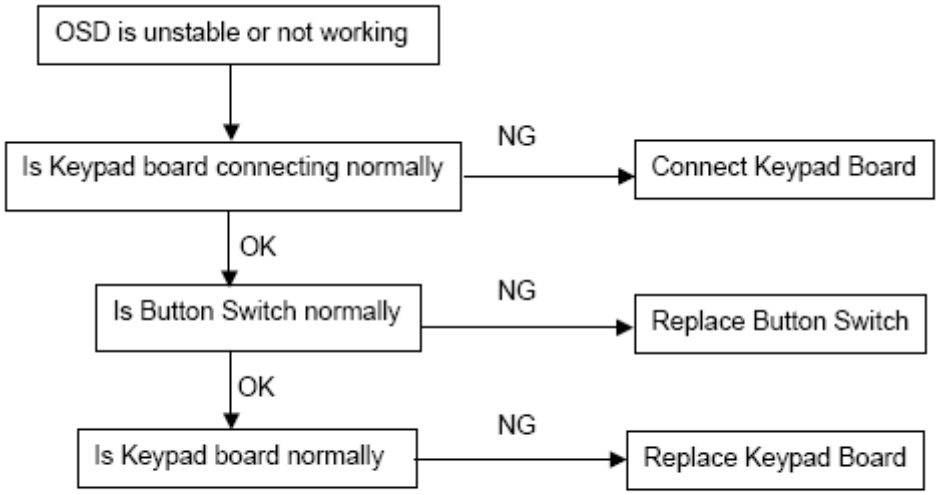
(2). No Picture


No picture
Measure U701 PIN2=3.3V,
U702 PIN2=1.8V?
NG
OK
Replace U701, U702
X401 oscillate waveforms are normal
OK
NG
Replace X401
Check if the sync signal from computer is output and video cable is connected normally
OK
NG
Input the sync signal of computer, or change the cable
Replace U401

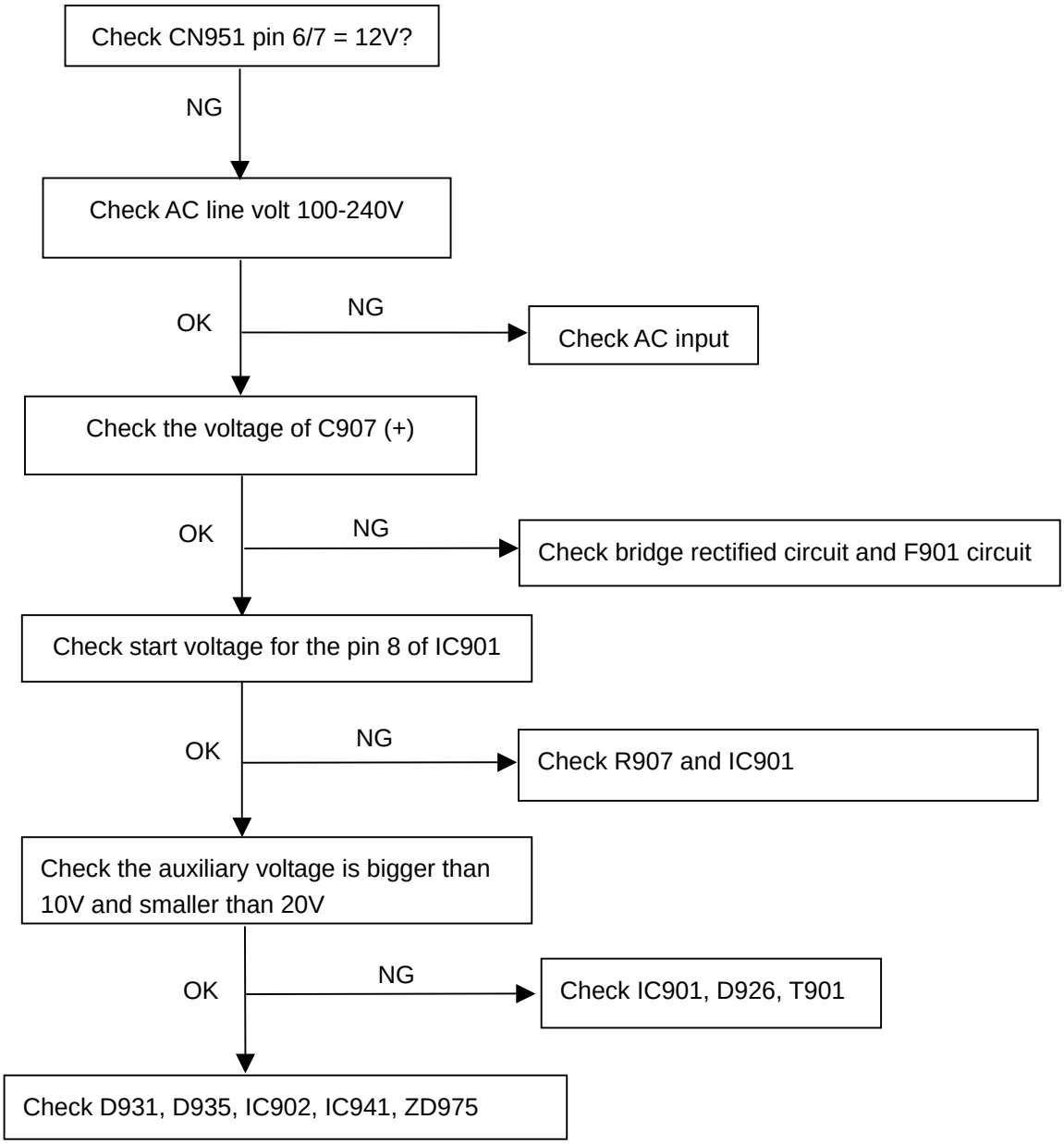
(3). White screen



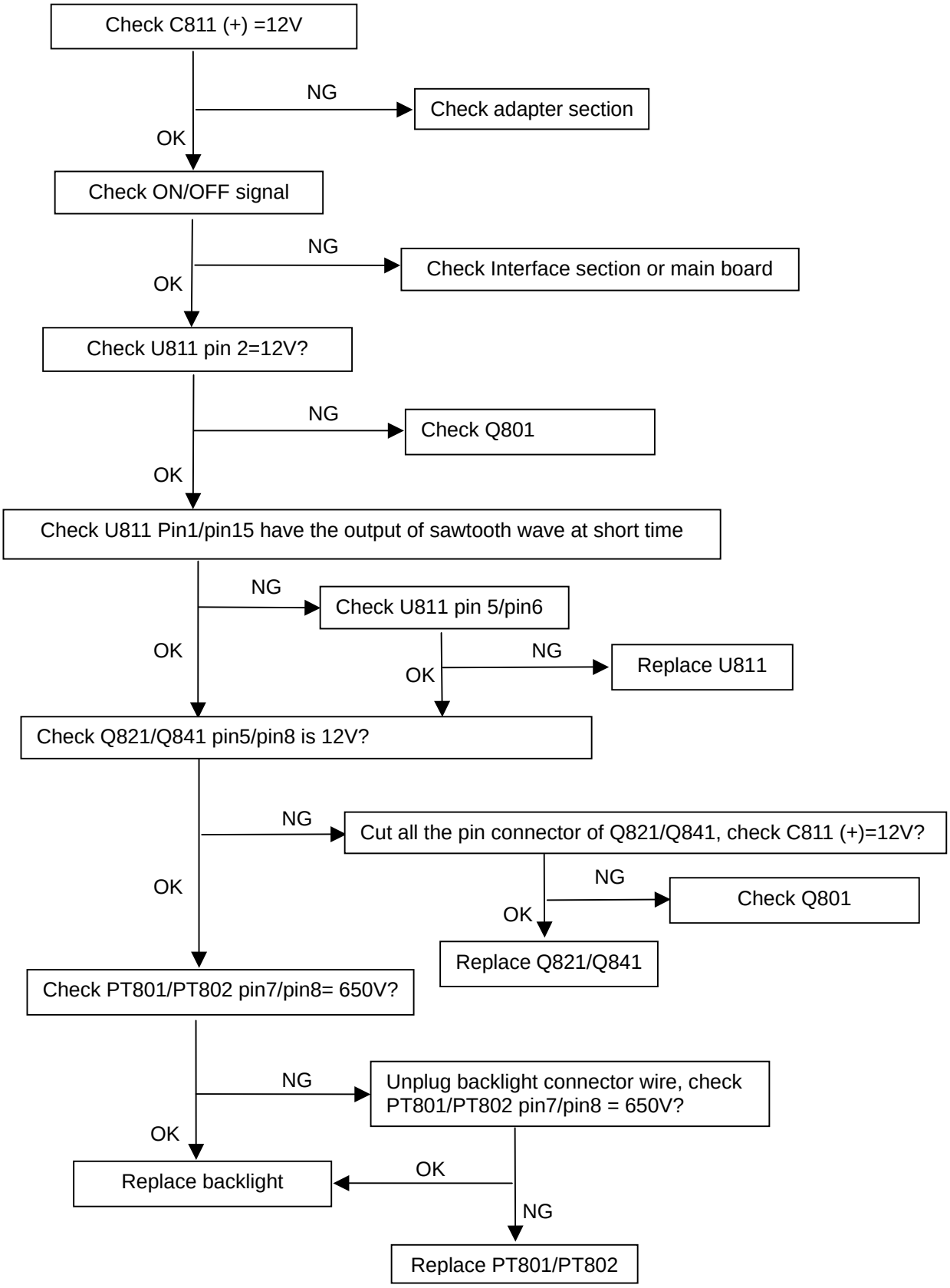
(4). Keypad Board



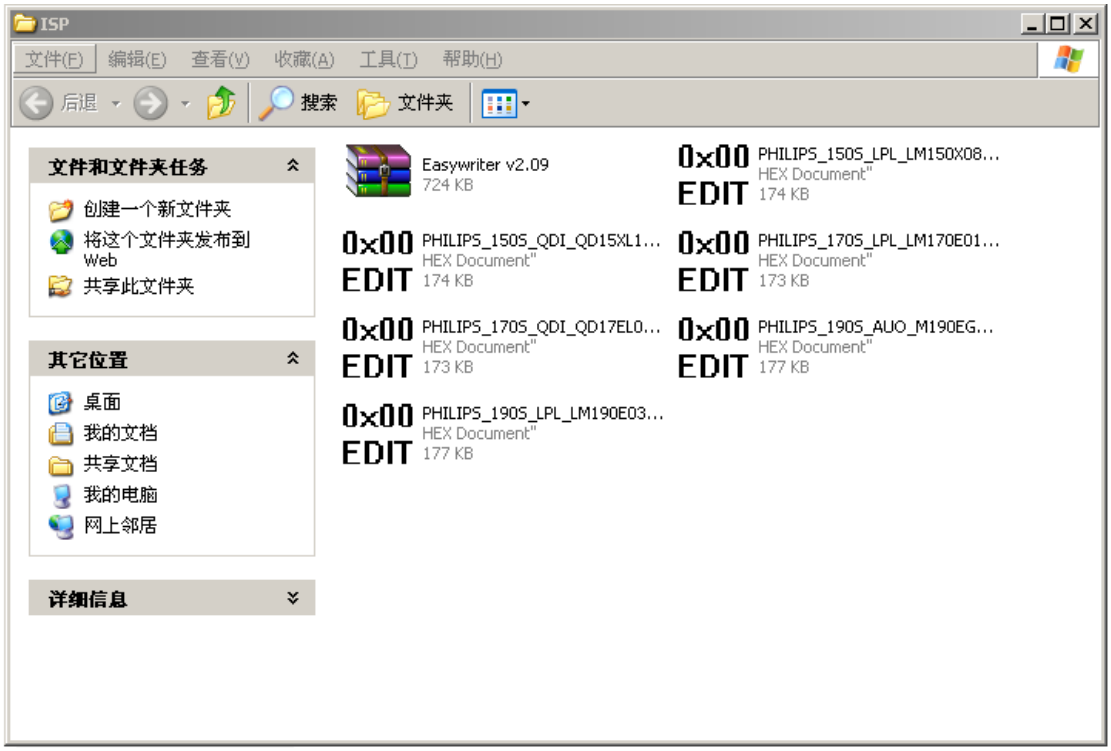
Power/Inverter Board
No power
Adapter Board



Inverter Board
No power

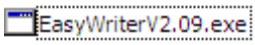


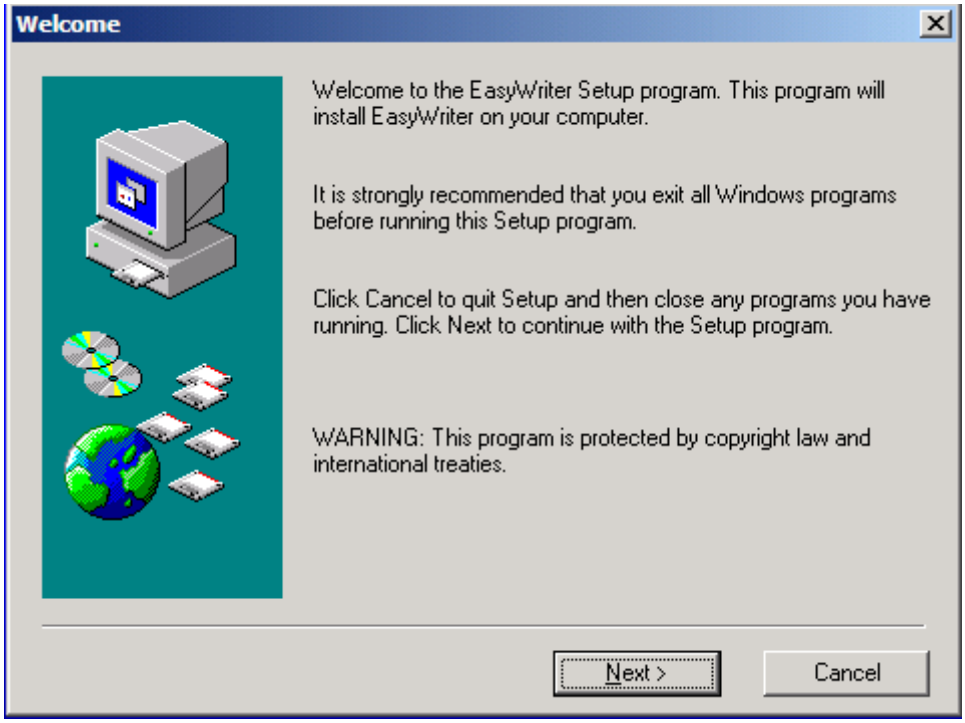
12. ISP Instruction (take 170S for example)

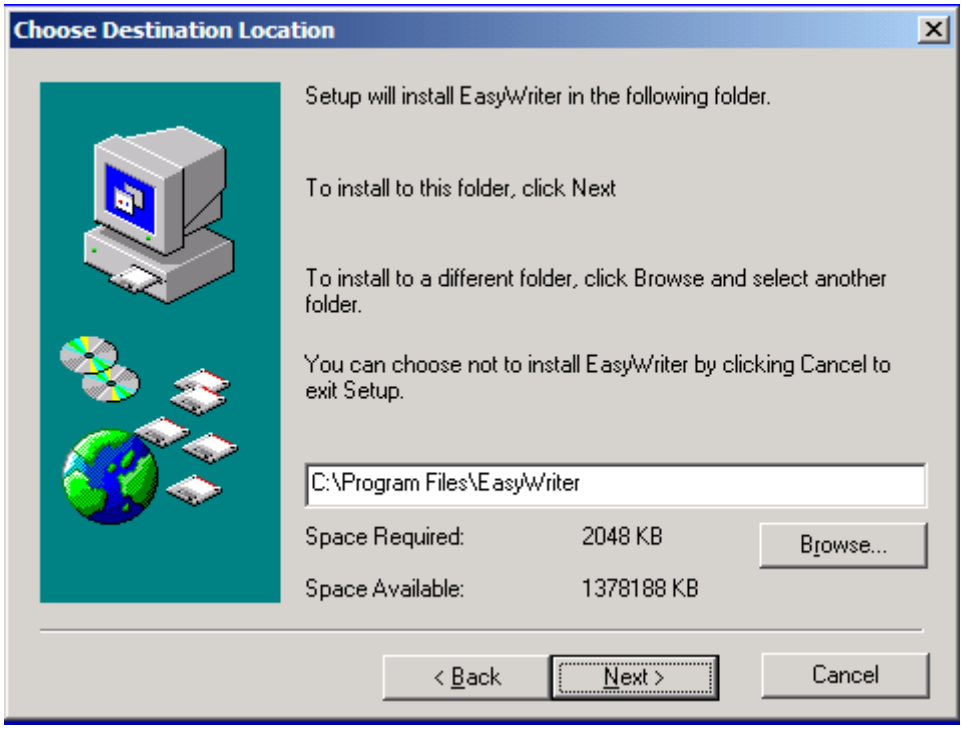


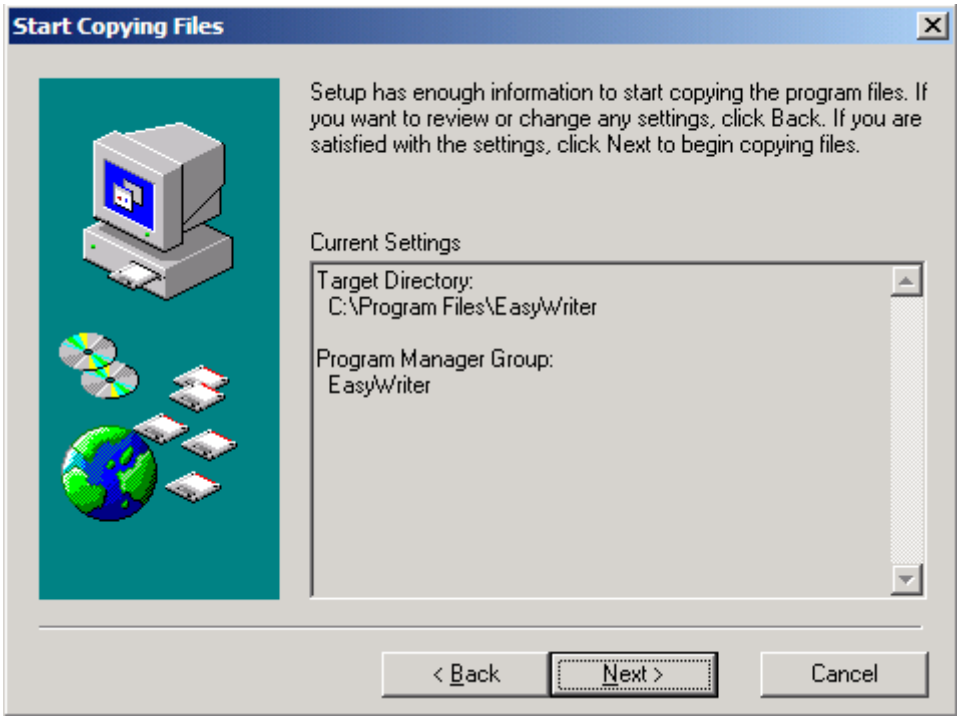
(1). Install the program software

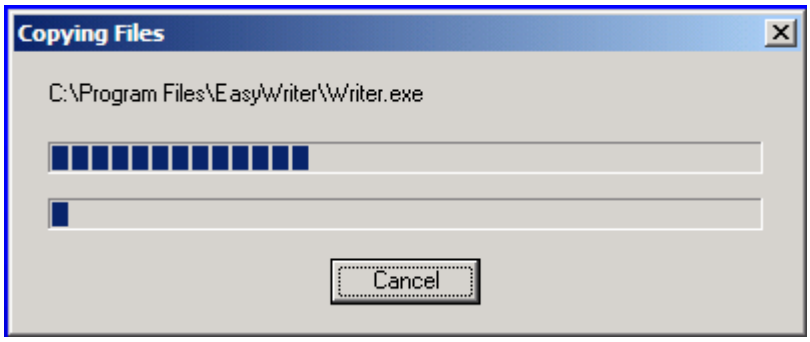
a. First decompressing files  EasyWriterV2.09.rar WinRAR 档案文件 518 KB, as follow:

b. Double – click  EasyWriterV2.09.exe, start to install as follows:


Welcome
Welcome to the EasyWriter Setup program. This program will install EasyWriter on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Next >
Cancel


Choose Destination Location
Setup will install EasyWriter in the following folder.
To install to this folder, click Next
To install to a different folder, click Browse and select another folder.
You can choose not to install EasyWriter by clicking Cancel to exit Setup.
C:\Program Files\EasyWriter
Space Required: 2048 KB
Space Available: 1378188 KB
Browse...
< Back
Next >
Cancel

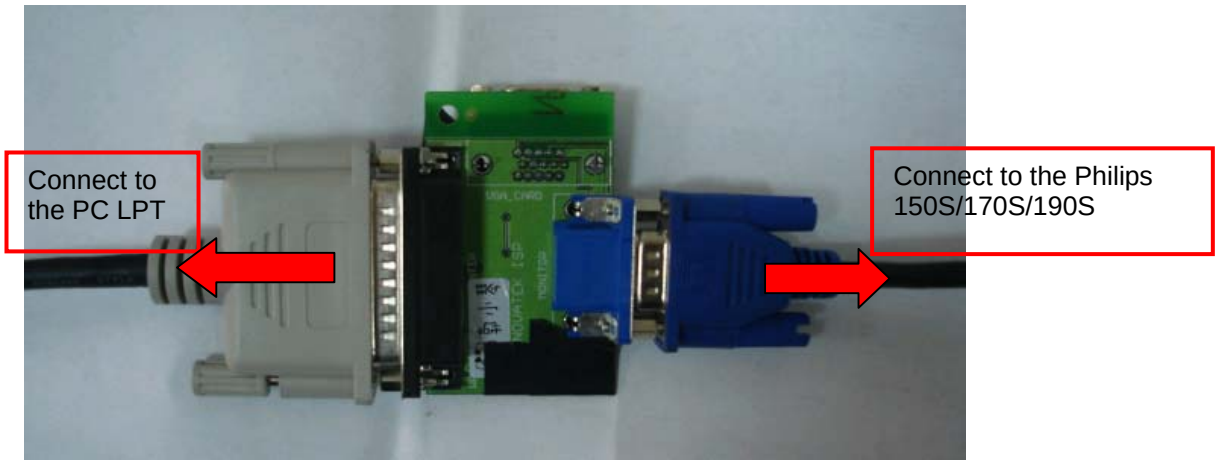




c. There will be a shortcut key 

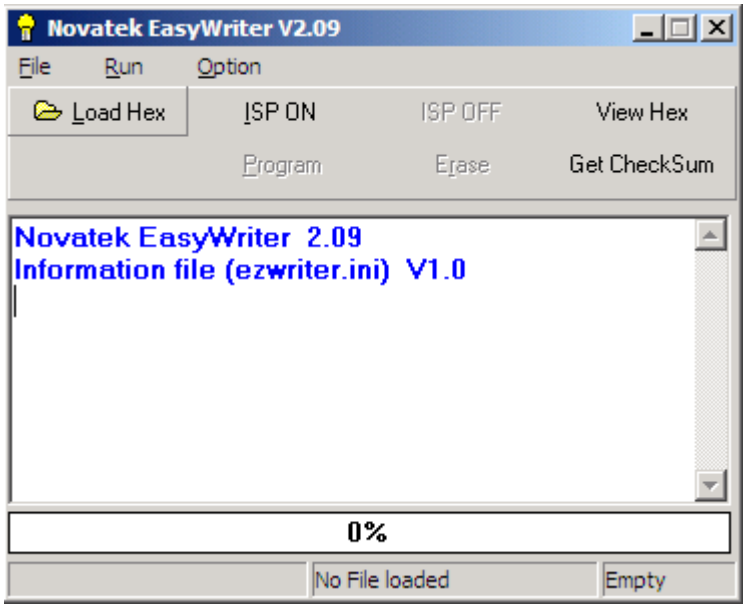
appears on the desktop.

(2). Connect the ISP board as follow:



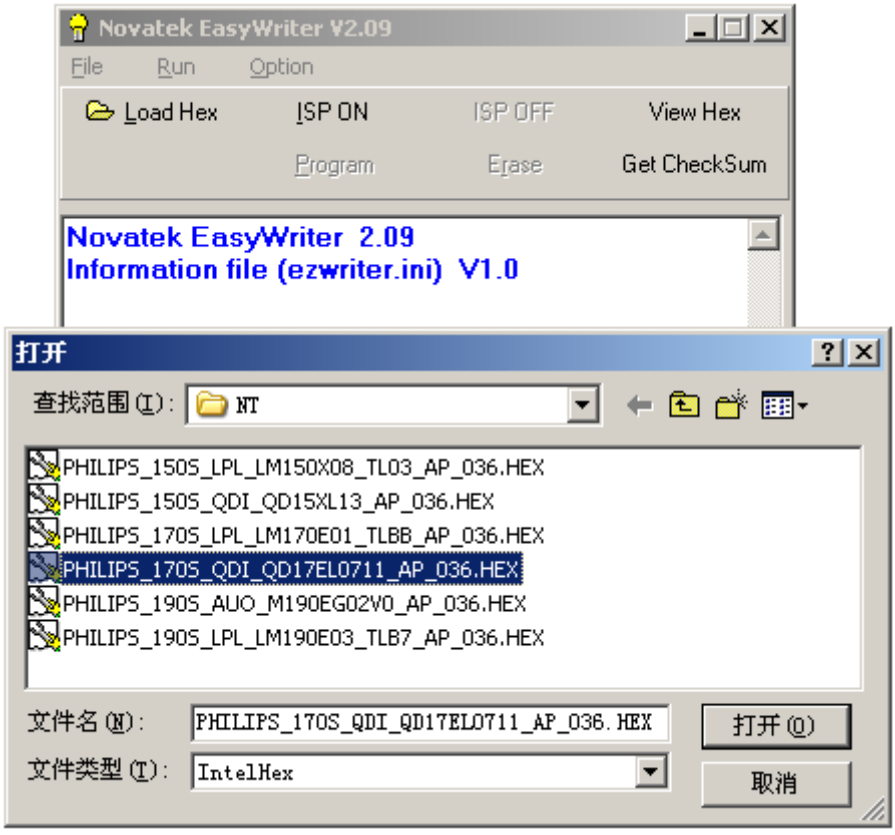
a. Double-click 

, running the program as follows:

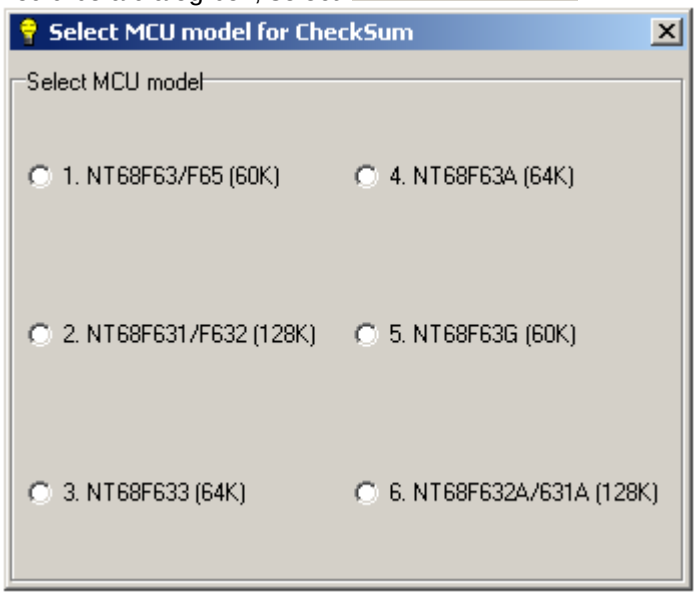


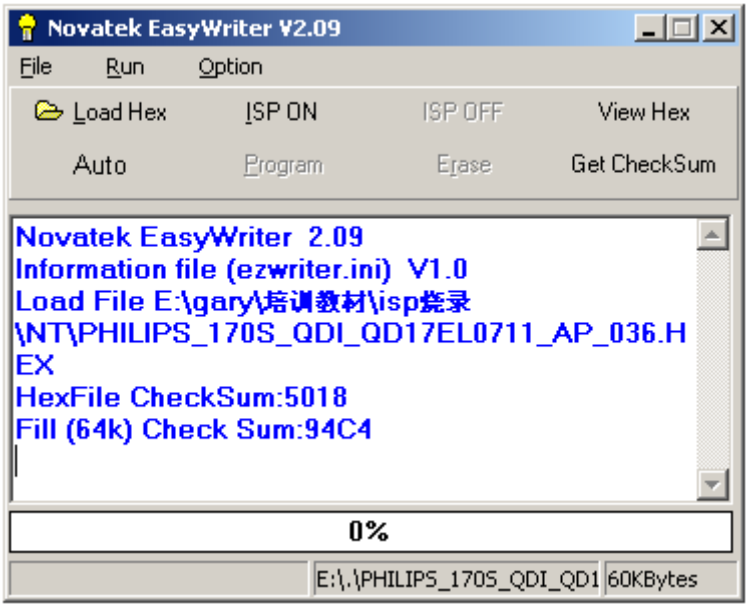
b. Click 

icon, search the program” PHILIPS_170S_QDI_QD17EL0711_AP_036.HEX”, and click **open:**

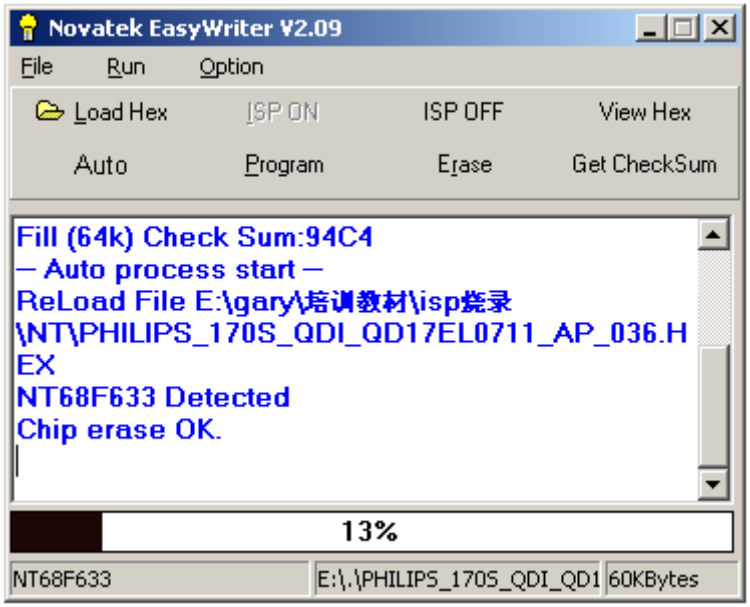


c. After click “OPEN”, there would be a dialog box, select 3. NT68F633 (64K).

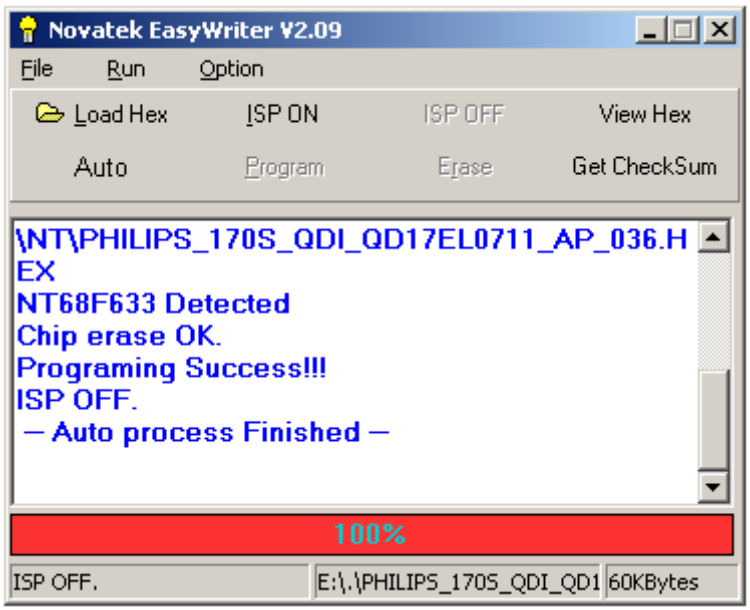




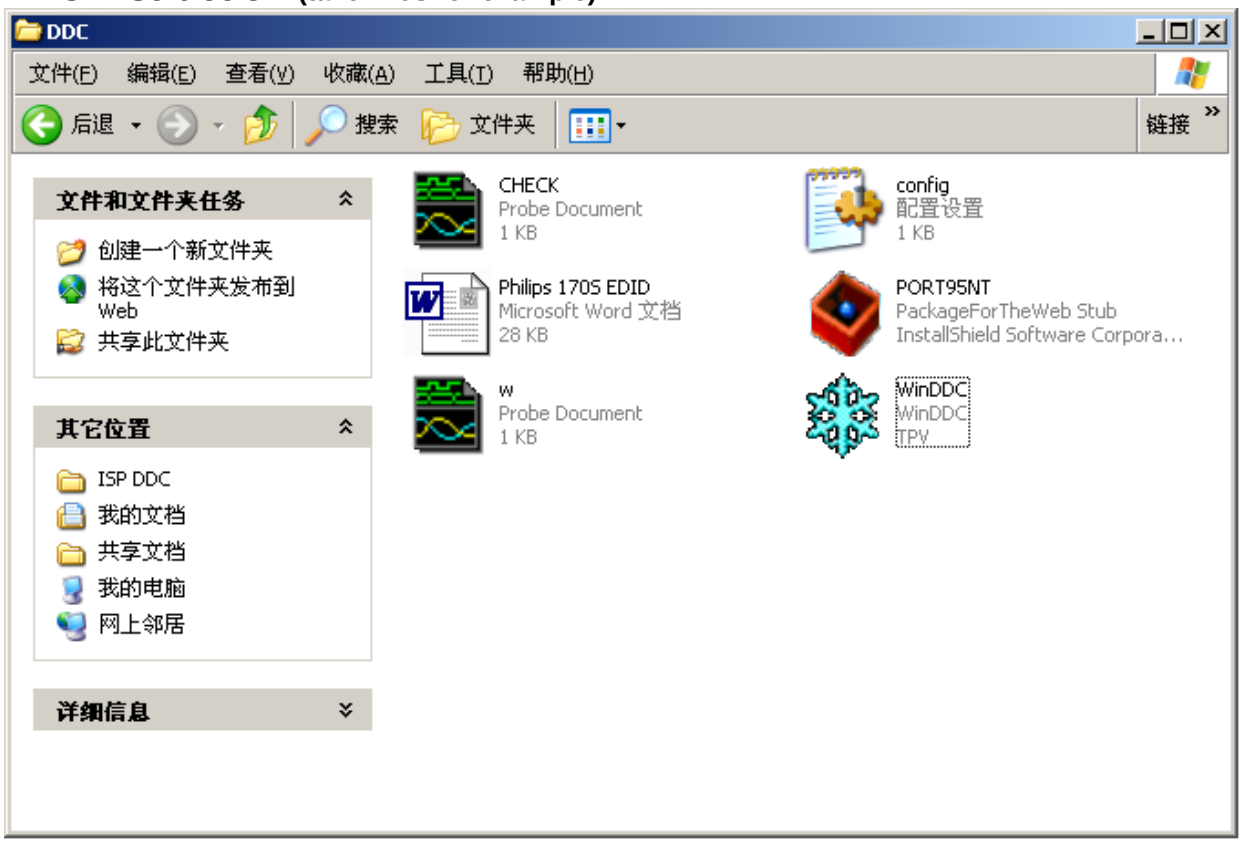
d. Click Auto icon, the writer is in processing…



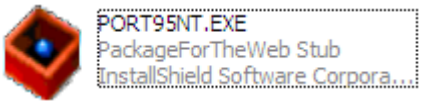
e. Until appears the follow Fig, writer completed.



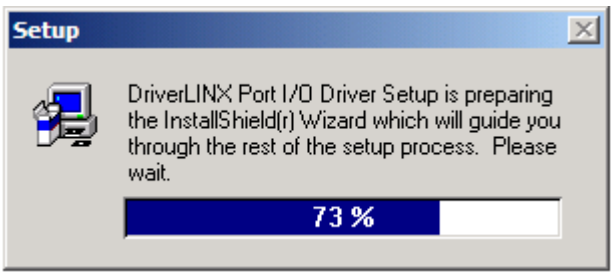
13. DDC Instruction (take 170S for example)

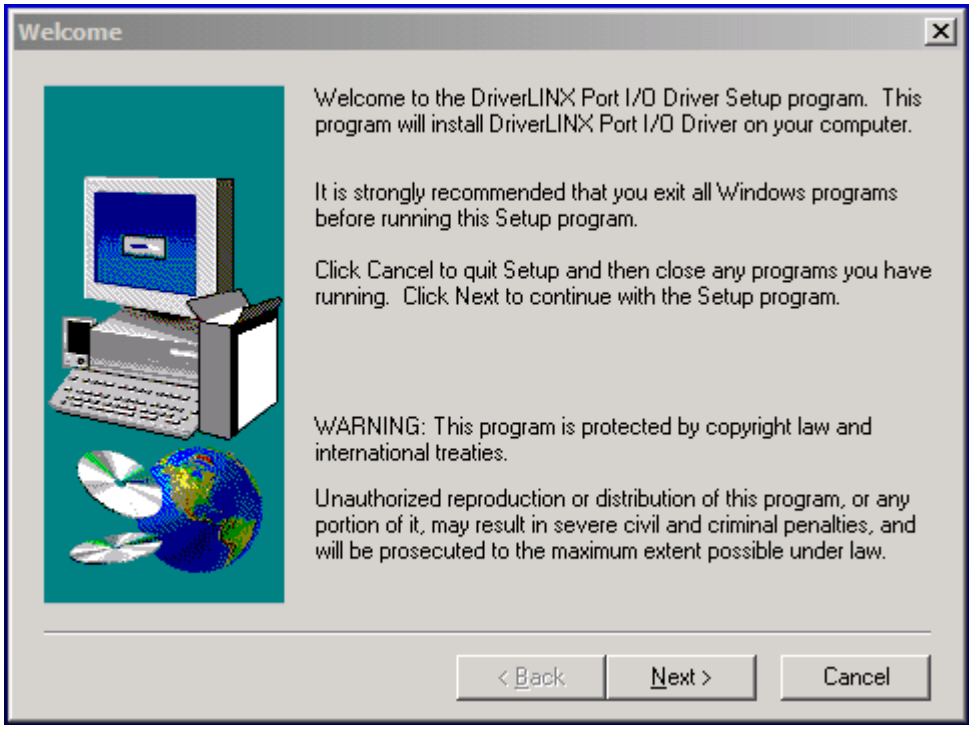


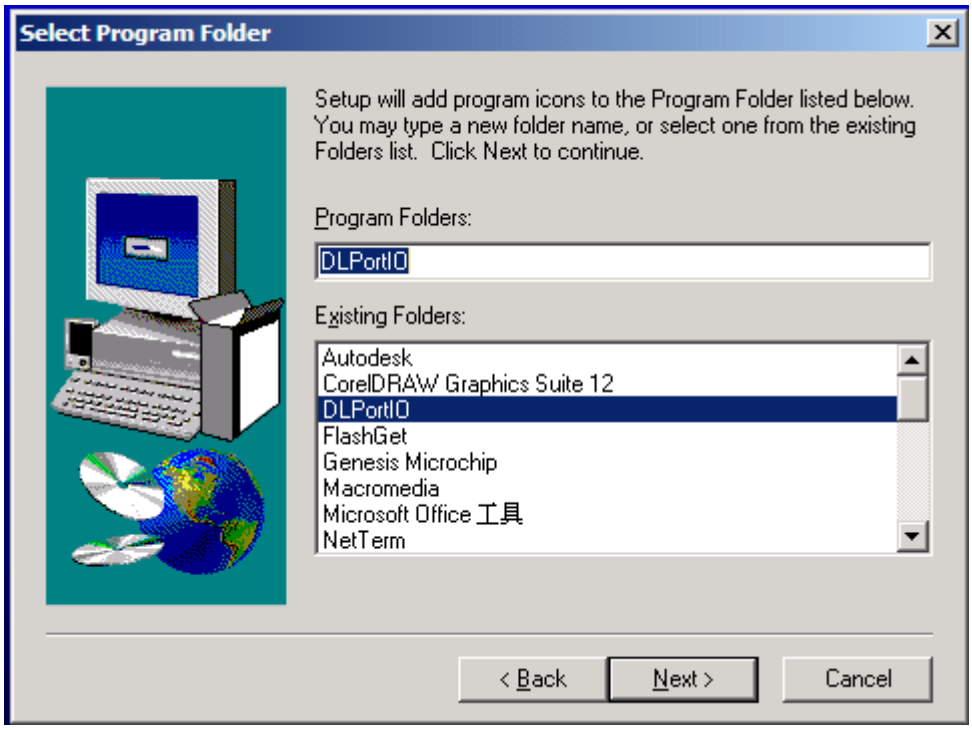
(1). Install software

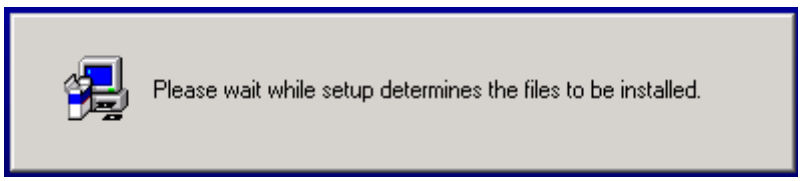
You must install the 

at the first. The processing as follows:

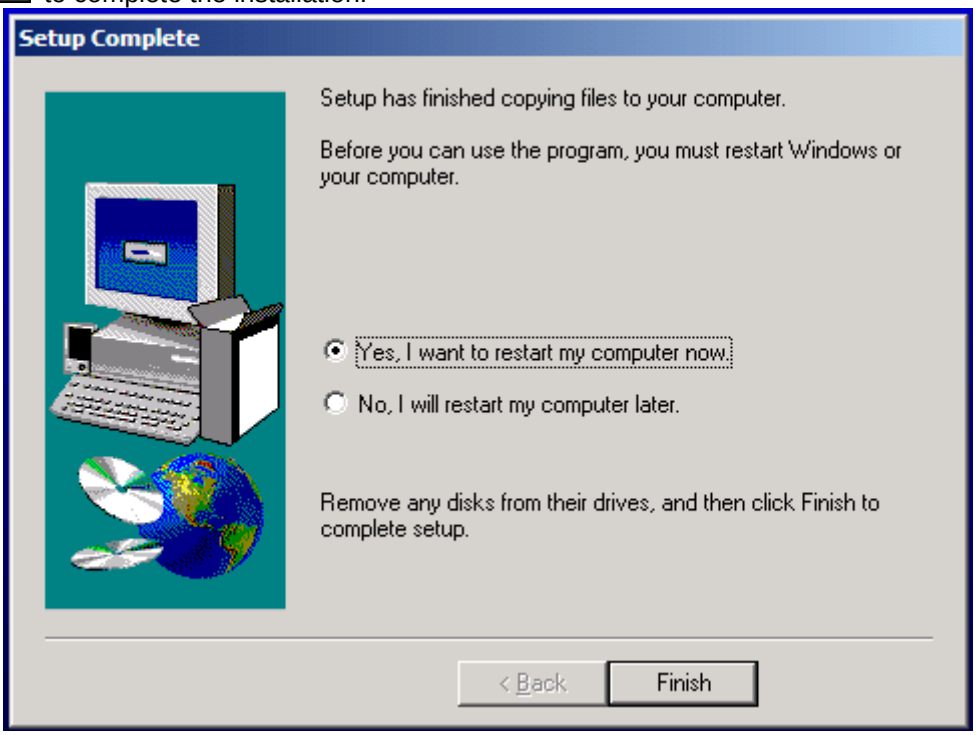



Welcome
Welcome to the DriverLINX Port I/O Driver Setup program. This program will install DriverLINX Port I/O Driver on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel


Select Program Folder
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing Folders list. Click Next to continue.
Program Folders:
DLPortIO
Existing Folders:
Autodesk
CorelDRAW Graphics Suite 12
DLPortIO
FlashGet
Genesis Microchip
Macromedia
Microsoft Office 工具
NetTerm
< Back
Next >
Cancel

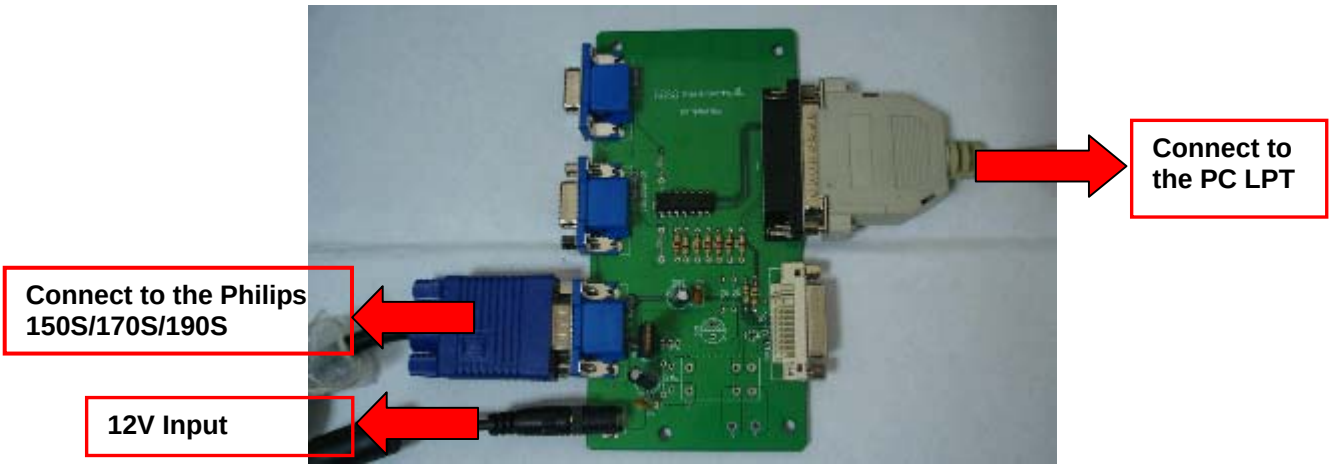

Please wait while setup determines the files to be installed.

Click Finish to complete the installation.

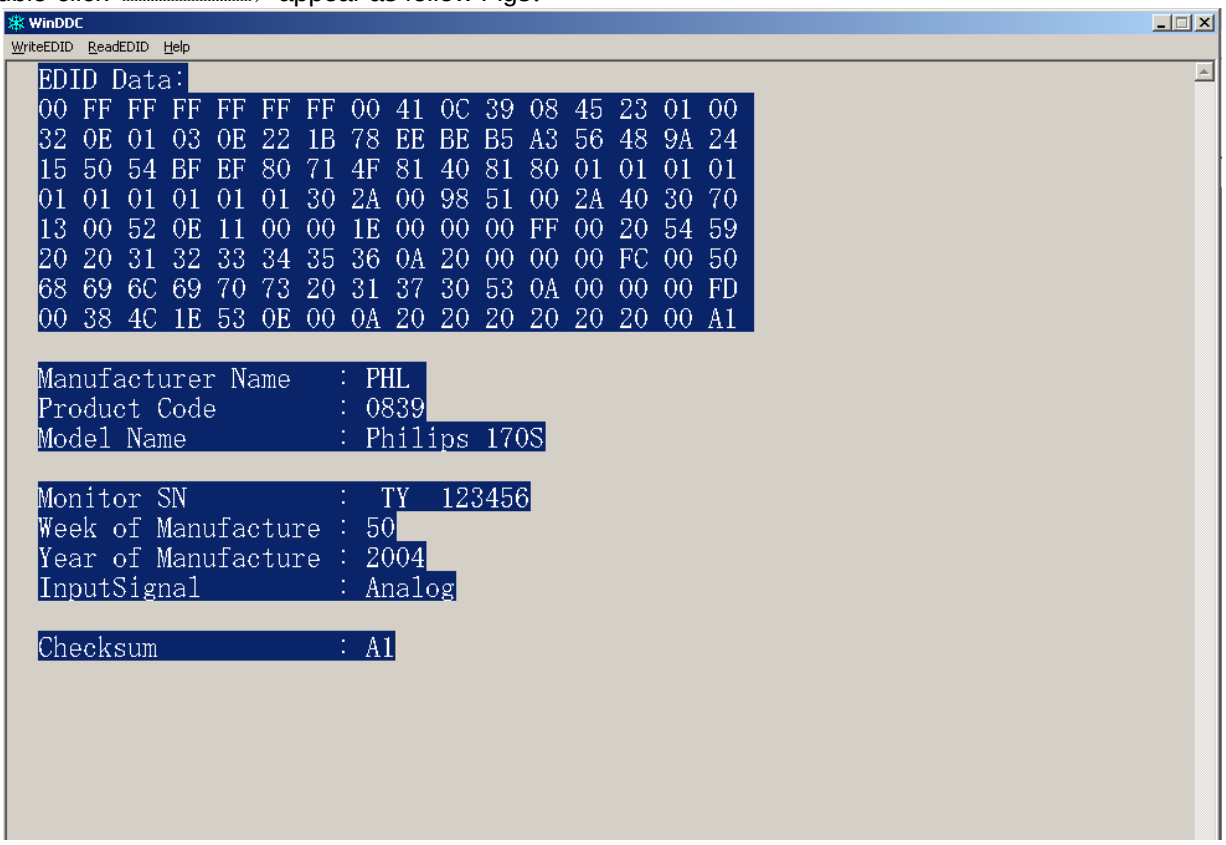


Note: After installation, you must restart the PC to take the setup effect.

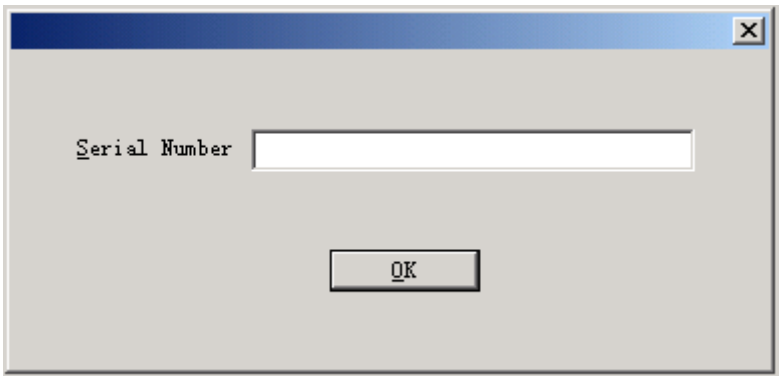
(2). Connect the DDC board as follow:



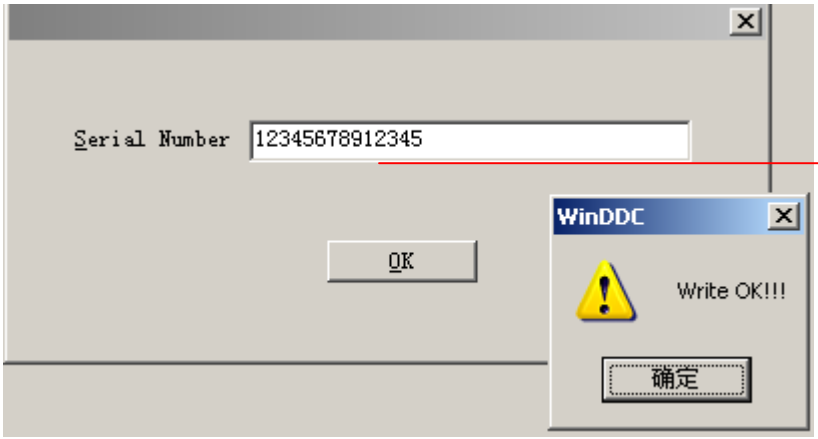
a. Double-click WinDDC.exe, appear as follow Figs：



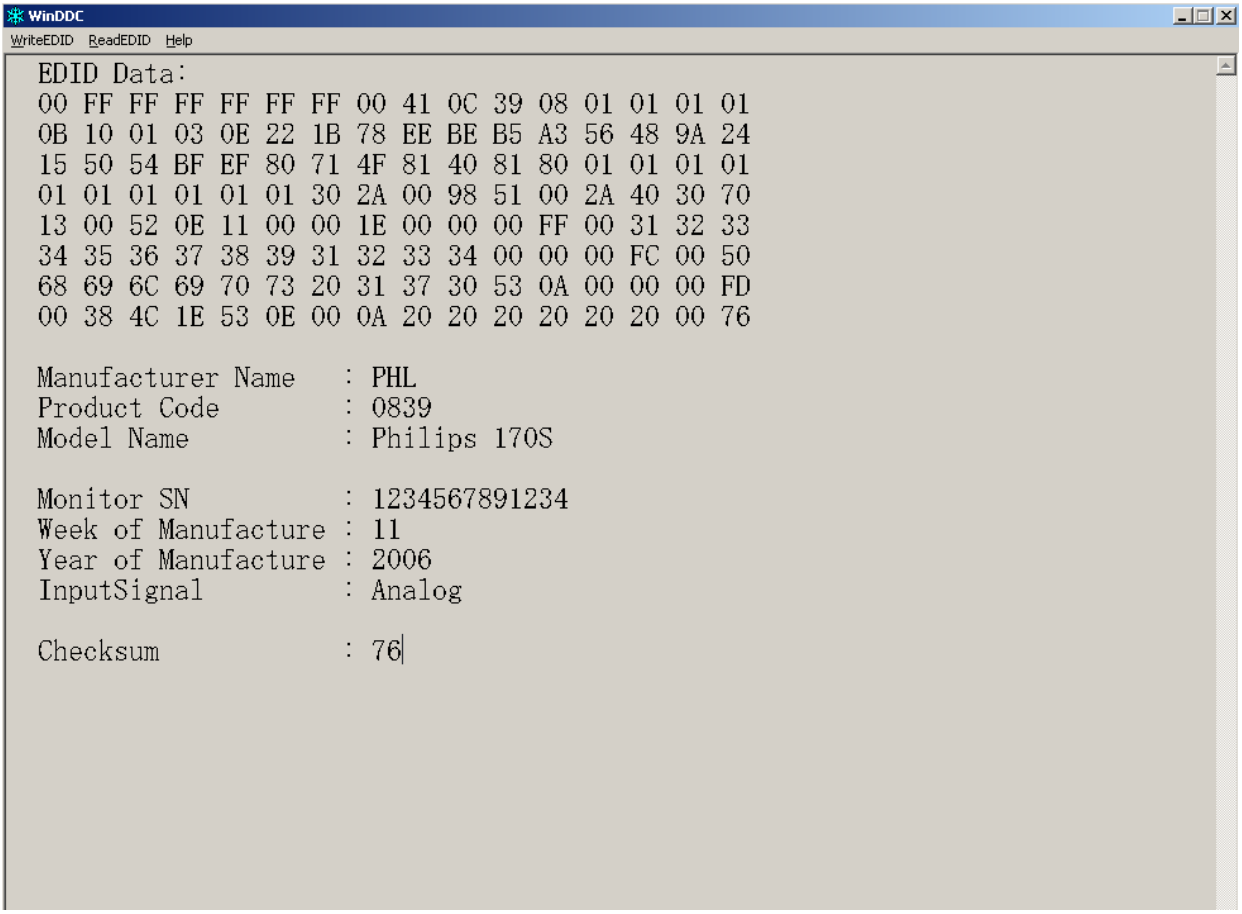
b. Click WriteEDID.



c. Key in the Serial Number printed on the barcode label, then click “OK”



d. Unit appears the following Fig, writer completed.



190V EDID Program：

Analog EDID

128 bytes EDID Data (Hex):

```
      00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15

0:    00 FF FF FF FF FF FF 00 41 0C 47 08 01 01 01 01
16:   0F 10 01 03 0E 26 1E 78 EE 6D 65 A2 5A 4C 9D 23
32:   13 4F 54 BF EF 80 71 4F 81 40 81 80 01 01 01 01
48:   01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
64:   13 00 78 2D 11 00 00 1E 00 00 00 FF 00 20 41 55
80:   20 20 30 30 30 30 30 31 0A 20 00 00 00 FC 00 50
96:   68 69 6C 69 70 73 20 31 39 30 56 0A 00 00 00 FD
112:  00 38 4C 1E 53 0E 00 0A 20 20 20 20 20 20 00 14
```

Decoded EDID data

```
<---Header--->

      Header: 00 FF FF FF FF FF FF 00

<-x-Header-x->

<---Vendor/Product Identification--->
      ID Manufacturer Name:       PHL
      ID Product Code:            0847
      ID Serial Number:           01010101
      Week of Manufacture:        15
      Year of Manufacture:        2006
<-x-Vendor/Product Identification-x->

<---EDID Structure Version/Revision--->
      EDID Version#:              01
      EDID Revision#:             03
<-x-EDID Structure Version/Revision-x->

<---Basic Display Parameters/Features--->
      Video i/p definition:       Analog
      Signal Level Standard:      0.700V/0.300V(1.000Vpp)
      Setup:                      Blank-to-Black not expected
      Separate Sync Support:      Yes
      Composite Sync Support:     Yes
      Sync. on green video supported: Yes
      Serration of the Vsync.Pulse is not required.
      Max. H. Image Size :        38cm.
      Max. V. Image Size :        30cm.
      Display Gamma:              2.2
      DPMS Features, Stand-by:    Yes.
      DPMS Features, Suspend:     Yes.
      DPMS Features, Active off:  Yes.
      Display Type: R.G.B color display.
      Standard Default Color Space:    Primary color space.
      Preferred Timing Mode:      In First Detailed Timing.
      GTF supported:    No.
<---Basic Display Parameters/Features--->

<---Color Characteristics--->
      Red x:              0.6337890625
      Red y:              0.3535156250
      Green x:            0.3007812500
      Green y:            0.6142578125
      Blue x:             0.1376953125
```

```
      Blue y:              0.0761718750
      White x:             0.3085937500
      White y:             0.3291015625
<-x-Color Characteristics-x->

<---Established Timings--->
Established Timings 1:   BF
       -720x400 @70Hz VGA,IBM
       -640x480 @60Hz VGA,IBM
       -640x480 @67Hz Apple,Mac II
       -640x480 @72Hz VESA
       -640x480 @75Hz VESA
       -800x600 @56Hz VESA
       -800x600 @60Hz VESA
Established Timings 2:   EF
       -800x600   @72Hz VESA
       -800x600   @75Hz VESA
       -832x624   @75Hz Apple,Mac II
      -1024x768   @60Hz VESA
      -1024x768   @70Hz VESA
      -1024x768   @75Hz VESA
      -1280x1024 @75Hz VESA
Established Timings 3:   80
      -1152x870   @75Hz Apple,Mac II
<-x-Established Timings-x->

<---Standard Timing Identification--->
      -1152x864     @75
      -1280x960     @60
      -1280x1024    @60
<-x-Standard Timing Identification-x->

<---Detailed Timing Descriptions--->
Detailed Timing:             1280x1024 @    60Hz.
<-x-Detailed Timing Descriptions-x->

<---Detailed Timing Descriptions--->
Detailed Timing:    FF (Monitor SN) ' AU    000001'
Detailed Timing:    FC (Monitor Name) 'Philips 190V'
Detailed Timing:    FD (Monitor limits)
      Min. V. rate:   56Hz
      Max. V. rate:  76Hz
      Min. H. rate:   30KHz
      Max. H. rate:  83KHz
      Max. Pixel Clock:            140MHz
<-x-Detailed Timing Descriptions-x->
Extension Flag:              00
Checksum:                       14
```

Digital EDID

128 bytes EDID Data (Hex):

```
      00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15

0:    00 FF FF FF FF FF FF 00 41 0C 47 08 01 01 01 01
16:   0F 10 01 03 80 26 1E 78 EE 6D 65 A2 5A 4C 9D 23
32:   13 4F 54 BF EF 80 71 4F 81 40 81 80 01 01 01 01
48:   01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
64:   13 00 78 2D 11 00 00 1E 00 00 00 FF 00 20 41 55
80:   20 20 30 30 30 30 30 31 0A 20 00 00 00 FC 00 50
96:   68 69 6C 69 70 73 20 31 39 30 56 0A 00 00 00 FD
112:  00 38 4C 1E 53 0E 00 0A 20 20 20 20 20 20 00 A2
```

Decoded EDID data

```
<---Header--->

      Header: 00 FF FF FF FF FF FF 00

<-x-Header-x->

<---Vendor/Product Identification--->
      ID Manufacturer Name:       PHL
      ID Product Code:            0847
      ID Serial Number:           01010101
      Week of Manufacture:        15
      Year of Manufacture:        2006
<-x-Vendor/Product Identification-x->

<---EDID Structure Version/Revision--->
      EDID Version#:              01
      EDID Revision#:             03
<-x-EDID Structure Version/Revision-x->

<---Basic Display Parameters/Features--->
      Video i/p definition:       Digital
      Max. H. Image Size :        38cm.
      Max. V. Image Size :        30cm.
      Display Gamma:              2.2
      DPMS Features, Stand-by:    Yes.
      DPMS Features, Suspend:     Yes.
      DPMS Features, Active off:  Yes.
      Display Type: R.G.B color display.
      Standard Default Color Space:    Primary color space.
      Preferred Timing Mode:      In First Detailed Timing.
      GTF supported:    No.
<---Basic Display Parameters/Features--->

<---Color Characteristics--->
      Red x:              0.6337890625
      Red y:              0.3535156250
      Green x:            0.3007812500
      Green y:            0.6142578125
      Blue x:             0.1376953125
      Blue y:             0.0761718750
      White x:            0.3085937500
      White y:            0.3291015625
<-x-Color Characteristics-x->

<---Established Timings--->
Established Timings 1:    BF
       -720x400 @70Hz VGA,IBM
```

-640x480 @60Hz VGA,IBM
-640x480 @67Hz Apple,Mac II
-640x480 @72Hz VESA
-640x480 @75Hz VESA
-800x600 @56Hz VESA
-800x600 @60Hz VESA
Established Timings 2: EF
-800x600 @72Hz VESA
-800x600 @75Hz VESA
-832x624 @75Hz Apple,Mac II
-1024x768 @60Hz VESA
-1024x768 @70Hz VESA
-1024x768 @75Hz VESA
-1280x1024 @75Hz VESA
Established Timings 3: 80
-1152x870 @75Hz Apple,Mac II
<-x-Established Timings-x->

<---Standard Timing Identification--->
-1152x864 @75
-1280x960 @60
-1280x1024 @60
<-x-Standard Timing Identification-x->

<---Detailed Timing Descriptions--->
Detailed Timing: 1280x1024 @ 60Hz.
<-x-Detailed Timing Descriptions-x->

<---Detailed Timing Descriptions--->
Detailed Timing: FF (Monitor SN) ' AU 000001'
Detailed Timing: FC (Monitor Name) 'Philips 190V'
Detailed Timing: FD (Monitor limits)
Min. V. rate: 56Hz
Max. V. rate: 76Hz
Min. H. rate: 30KHz
Max. H. rate: 83KHz
Max. Pixel Clock: 140MHz
<-x-Detailed Timing Descriptions-x->

Extension Flag: 00
Checksum: A2

14. White Balance, Luminance Adjustment

Approximately 30 minutes should be allowed for warm up before proceeding White-Balance adjustment.

1. Required instruments: Chroma 7120、Chroma 2325（BGA265A）。
2. First connect the instruments together and turn on the LCD power.
3. Set Chroma 2325（BGA265A）to be T144（1280*1024/60HZ）and P105 of full white screen.
4. **Enter into the factory mode:**
   Firstly, turn off the power, press the AUTO and OK at one time, and then turn the power on (AUTO and OK are still pressed, about 10s), release, press the menu again will activate the factory mode, the factory OSD will be at the left top of the screen.

   Move the cursor to select the Hyson 190V7**********, press OK button to enter into the sub-menu; Move the cursor again to select ” Cool/warm “.
5. Set Chroma-7120 CH3 as 9300K color temperature by ID key, press SC and Next key set 9300K: x=283±20, y=297±20,Y>230.

   Set Chroma-7120 CH4 as 6500K color temperature by ID key, press SC and Next key set 6500K: x=313±20, y=329±20,Y>200.

6. Adjust 9300K color temperature:
   1). Switch the Chroma-7120 to RGB-Mode (with press “MODE” button)
   2). Switch the MEM. Channel to Channel 3 (with up or down arrow on chroma 7120)
   3). Adjust the **R** of Cool item on factory window until chroma 7120 indicator reached the value R=100±5
   4). Adjust the **G** of Cool item on factory window until chroma 7120 indicator reached the value G=100±5
   5). Adjust the **B** of Cool item on factory window until chroma 7120 indicator reached the value B=100±5
   6). Switch the Chroma-7120 to x, y, Y Mode (with press “MODE” button), check whether the color-temperature value is within Spec (the Spec is 9300K: x=283±20, y=297±20,Y>230). If not in the SPEC, repeat step 3,4,5.

7. Adjust 6500K/SRGB color temperature:
   1). Switch the Chroma-7120 to RGB-Mode (with press “MODE” button)
   2). Switch the MEM. Channel to Channel 4 (with up or down arrow on chroma 7120)
   3). Adjust the **R** of Warm item on factory window until chroma 7120 indicator reached the value R=100±5
   4). Adjust the **G** of Warm item on factory window until chroma 7120 indicator reached the value G=100±5
   5). Adjust the **B** of Warm item on factory window until chroma 7120 indicator reached the value B=100±5
   6). Switch the Chroma-7120 to x, y, Y Mode, check whether the color-temperature value is within Spec.
   the Spec is 6500K: x=313±20, y=329±20,Y>200. If not in the SPEC, repeat step 3,4,5.

Turn the Power-button off to quit and save the factory mode.

15. Spare Parts List

190V7FB/27

PCB

Part No for TPV	Description	Philips 12NC
CBPC980KGNP2P	CONVERSION BOARD (LG)	9965 000 38104
CBPC980KANP2P	CONVERSION BOARD (AU)	9965 000 38105
PWPC1942LGR1P	POWER BOARD	9965 000 36896
KEPC780KE7P	KEY BOARD	9965 000 35900

Panel

Part No for TPV	Description	Philips 12NC
750GLG90E3B21M	PANEL LCD 19" E03 TLBD PHILIPS L	9965 000 36894
750GLU90G2012M	PANEL LCD 19" EG02 V0 PHILIPS AU	9965 000 38103

Accessory and Mechanical

Part No. for TPV	Description	Philips 12NC
705GQ9K0P34VB1	STAND-BASE ASS'Y	9965 000 37341
089G179E30C6	FFC CABLE P-TWO	9965 000 36891
089G402A18NIS	POWER CORD	9965 000 37563
089G728GAA550	SIGNAL CABLE D-SUB GREATIAND	9965 000 35909
089G1748HAA15	SIGNAL CABLE DVI HONGLIN	9965 000 37361
P15G82991	BKT-VESA	9965 000 35919
P15G83011	POWER BRACKET	9965 000 36897
P15G83101	MAIN FRAME	9965 000 36898
P33G4975VQA1C	BUTTON_OSD	9965 000 37343
P34G1829VBC1T	BEZEL	9965 000 38215
P34G1830VB1T	REAR COVER	9965 000 36902
P34G1832VB1B	COVER_HINGE	9965 000 36903
P15G00311	BASE BRACKET	9965 000 37495
P34G0004VB1B	STAND-BASE	9965 000 37496
P37G5651	BASE ASSY	9965 000 37497

Main Board

Location	Part No. for TPV	Description	Philips 12NC
CN406	033G801930FH	FPC CONN. 1.0MM 30P	9965 000 36924
C712	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C711	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C710	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C709	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C708	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C707	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C426	067G215L4713N	KY16VB470M-L 10*12.5	9965 000 36922
C431	067G215V4704N	KY25VB47-M-CC3.0 5*11MM	9965 000 36923
C432	067G215Y4797N	LOW ESR EC 4.7 UF 50V NCC	9965 000 35959
X401	093G2251	CRYSTAL 12MHZ HC-49US ARG6-120	9965 000 35961
U401	056G562913	NT68663MEFG	9965 000 36927
U702	056G56331	AI1117D-1.8-EI	9965 000 35963
U701	056G56363	MM1117DT33 TO-252 MMC	9965 000 36928
U403	056G113324	AT24C16AN-10SU-2.7	9965 000 35964
U404	056G113334	M24C02-WMN6TP	9965 000 35965
U405	056G113334	M24C02-WMN6TP	9965 000 35965
Q401	057G4174	PMBS3904/PHILIPS-SMT(04)	9965 000 35966
Q406	057G4174	PMBS3904/PHILIPS-SMT(04)	9965 000 35966
Q404	057G41713T	KEC 2N3906S-RTK/PS	9965 000 35967
Q402	057G41713T	KEC 2N3906S-RTK/PS	9965 000 35967
Q405	057G7631	A03401 SOT23 BY AOS(A1)	9965 000 35968
R466	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R467	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R468	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R486	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R487	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R499	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R410	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R411	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R490	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R491	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R465	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB402	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB405	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB406	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R416	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R450	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R457	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R461	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R462	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R463	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002

R464	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R441	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R440	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R453	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R489	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R488	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R452	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R451	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R408	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R407	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R406	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R405	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R497	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R496	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R484	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R470	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R433	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R432	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R420	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R422	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R426	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R427	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R428	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R431	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R469	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R446	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R476	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R472	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R459	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R458	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R419	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R418	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R417	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R415	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R402	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R401	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R414	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R404	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R403	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R434	061L0603105	RST SM 0603 RC0603 1M PM5 R	9965 000 35973
R421	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R423	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R424	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R438	061L0603221	CHIPR 220 OHM -5% 1/16W	9965 000 35976

R437	061L0603221	CHIPR 220 OHM -5% 1/16W	9965 000 35976
R435	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R436	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R442	061L0603332	CHIP 3.3K OHM 1/10W	9965 000 35978
R443	061L0603332	CHIP 3.3K OHM 1/10W	9965 000 35978
R445	061L06033900F	CHIP 390 OHM 1/10W 1%	9965 000 35979
R471	061L06033900F	CHIP 390 OHM 1/10W 1%	9965 000 35979
R701	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R481	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R480	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R479	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R478	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R460	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R447	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R454	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R455	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R456	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R444	061L1206151	CHIP 150OHM 1/4W	9965 000 36068
R473	061L1206151	CHIP 150OHM 1/4W	9965 000 36068
C429	065G060310031	CHIP 10PF -0.5PF 50V NPO	9965 000 36916
C470	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C469	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C468	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C467	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C466	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C465	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C464	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C463	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C462	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C401	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C402	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C456	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C457	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C458	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C459	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C460	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C461	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C448	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C447	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C446	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C445	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C444	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C443	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C442	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918

C441	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C440	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C449	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C450	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C454	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C455	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C701	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C702	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C703	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C704	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C705	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C706	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C409	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C410	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C411	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C413	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C414	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C416	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C417	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C418	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C419	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C420	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C439	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C438	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C437	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C436	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C425	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C424	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C423	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C422	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C421	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C427	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C428	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C430	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C412	065G060322415	CHIP 0.22UF 16VX5R	9965 000 36920
C408	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C407	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C406	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C405	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C404	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C403	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
FB407	071G56D102	B201209D102TT	9965 000 37332
FB707	071G56K121	CHIP BEAD	9965 000 35993
FB704	071G56K121	CHIP BEAD	9965 000 35993

FB703	071G56K121	CHIP BEAD	9965 000 35993
FB702	071G56K121	CHIP BEAD	9965 000 35993
FB701	071G56K121	CHIP BEAD	9965 000 35993
FB412	071G56K121M	CHIP BEAD	9965 000 36567
FB411	071G56K121M	CHIP BEAD	9965 000 36567
FB410	071G56K121M	CHIP BEAD	9965 000 36567
FB408	071G56K121M	CHIP BEAD	9965 000 36567
FB414	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB413	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB420	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB419	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB418	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB417	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB416	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB415	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB404	071G59B300K		9965 000 36934
FB403	071G59B300K		9965 000 36934
FB401	071G59B300K		9965 000 36934
D415	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D414	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D413	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D412	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D411	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D410	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D409	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D408	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D407	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D406	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D405	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D404	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D417	093G6442PP	BAV70 SOT-23	9965 000 35995
D416	093G6442PP	BAV70 SOT-23	9965 000 35995
ZD414	093G39S34T	UDZS5.6B	9965 000 35996
ZD413	093G39S34T	UDZS5.6B	9965 000 35996
ZD412	093G39S34T	UDZS5.6B	9965 000 35996
ZD411	093G39S34T	UDZS5.6B	9965 000 35996
ZD410	093G39S34T	UDZS5.6B	9965 000 35996
ZD409	093G39S34T	UDZS5.6B	9965 000 35996
ZD408	093G39S34T	UDZS5.6B	9965 000 35996
ZD407	093G39S34T	UDZS5.6B	9965 000 35996
ZD406	093G39S34T	UDZS5.6B	9965 000 35996
ZD405	093G39S34T	UDZS5.6B	9965 000 35996
ZD404	093G39S34T	UDZS5.6B	9965 000 35996
ZD403	093G39S34T	UDZS5.6B	9965 000 35996
ZD402	093G39S34T	UDZS5.6B	9965 000 35996
ZD401	093G39S34T	UDZS5.6B	9965 000 35996
D701	093G20403F	FA20-04	9965 000 36935
D702	093G20403F	FA20-04	9965 000 36935

Power Board

Location	Part No. for TPV	Description	Philips 12NC
IC902	056G1393A	PC123Y22FZOF	9965 000 36055
NR901	061G5810T	8 OHM 4A NTCR BY THINKING	9965 000 36938
R905	061G152M10464	100KOHM 5% 2W	9965 000 36939
R920	061G152M20864	0.20 OHM 2W	9965 000 36940
C808	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C807	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C803	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C802	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C801	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C806	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C900	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C901	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C912	065G305M2222BP	2200PF -20%	9965 000 36944
C936	067G215D2222KV	105∑ 2200UF M 10V	9965 000 36945
C840	067G215D4714K	ED 470UF 25V	9965 000 36007
C907	067G215S10115K	100UF 450V	9965 000 36086
C933	067G215S1024K	ED1000UF 25V	9965 000 36946
C932	067G215S1024K	ED1000UF 25V	9965 000 36946
L902	071G5524	FERRITE BEAD	9965 000 36947
L903	071G5524	FERRITE BEAD	9965 000 36947
L901	073G17465LS	LINE FILTER BY LISHIN	9965 000 36025
L951	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
L955	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
T901	080GL17T900T	X'FMR SRW28LEC-T93H016	9965 000 36950
PT801	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
PT802	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
CN901	087G50132S	AC SOCKET	9965 000 36028
BD901	093G5046016	U4KB80R	9965 000 36951
D901	093G6026T52T	RECTIFIER DIODE FR107	9965 000 36030
	705G078057001	Q920 ASS'Y	9965 000 36954
	705G078093010	D931 ASS'Y	9965 000 36955
	705G078093011	D935 ASS'Y	9965 000 36956
	PW1742R1SMTP	POWER BOARD FOR SMT	9965 000 36936
			9965 000 36936
Q901	057G60035	STP8NK80ZFP	9965 000 36959
D931	093G60267	SP10100	9965 000 36957
D935	093G15062	FMW-2156	9965 000 36958
IC901	056G564911	IC TEA1532AT S08	9965 000 36960
U811	056G60810	0Z9938	9965 000 36059
Q874	057G41712T	KEC 2N3904S-RTK/PS	9965 000 36961
Q886	057G7592	RK7002	9965 000 36033
Q885	057G7592	RK7002	9965 000 36033

Q883	057G7592	RK7002	9965 000 36033
Q881	057G7592	RK7002	9965 000 36033
Q871	057G7592	RK7002	9965 000 36033
Q873	057G7604B	PDTA144WK SOT346	9965 000 36962
Q841	057G76314	AM9945N	9965 000 36100
Q821	057G76314	AM9945N	9965 000 36100
RJ827	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R849	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R829	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R822	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R823	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R842	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R843	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R954	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R836	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R855	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R856	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R835	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R941	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R851	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R888	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R886	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R884	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R882	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R831	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R801	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R804	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R807	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R880	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R887	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R802	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R872	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R885	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R883	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R881	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R819	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R912	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R946	061L08051103F	110KOHM 1% 1/10W	9965 000 36966
R853	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R833	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R923	061L0805123	CHIP 12KOHM 1/8W	9965 000 36968
R914	061L08051241F	CHIP 1.24K OHM 1/10W 1%	9965 000 36969
R916	061L0805152	CHIPR 1.5K OHM -5% 1/10W	9965 000 36970
R873	061L0805202	CHIP 2KOHM 1/8W	9965 000 36971

R816	061L0805203	CHIPR 20KOHM -5% 1/8W	9965 000 36972
R865	061L08052320F	CHIP 232OHM	9965 000 36973
R815	061L0805303	CHIP 30K OHM 1/8W	9965 000 36974
R813	061L08053302F	CHIP 33KOHM 1/8W 1%	9965 000 36975
R874	061L0805331	CHIP 330 OHM 5% 1/10W	9965 000 36976
R917	061L0805333	CHIP 33KOHM 1% 1/8W	9965 000 36977
R811	061L0805335	3.3M 0805	9965 000 36978
R943	061L08055101F	CHIP 5.1K OHM 1/10W 1%	9965 000 36979
R812	061L0805624	CHIP 620KOHM 5% 0805 1/8W	9965 000 36980
R825	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R837	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R944	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
R945	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
R926	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R918	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R907	061L1206103	CHIP 10KOHM 5% 1/4W	9965 000 36016
R904	061L1206155	1.5M/0805	9965 000 36983
R910	061L1206155	1.5M/0805	9965 000 36983
R937	061L1206182	CHIP 1.8KOHM	9965 000 36984
R931	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R932	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R927	061L1206472	CHIP 4.7KOHM 5% 1/4W	9965 000 36986
R902	061L1206684	CHIPR 680K OHM -5% 1/8W	9965 000 36024
R901	061L1206684	CHIPR 680K OHM -5% 1/8W	9965 000 36024
R900	061L1206684	CHIPR 680K OHM -5% 1/8W	9965 000 36024
C838	065G080510231	1000PF 50V NPO	9965 000 36991
C861	065G080510231	1000PF 50V NPO	9965 000 36991
C822	065G080510232	CHIP 1000P 50VX7R 0805	9965 000 36038
C823	065G080510232	CHIP 1000P 50VX7R 0805	9965 000 36038
C842	065G080510232	CHIP 1000P 50VX7R 0805	9965 000 36038
C843	065G080510232	CHIP 1000P 50VX7R 0805	9965 000 36038
C887	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C885	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C883	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C881	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C819	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C913	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C955	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C951	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C812	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C914	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C841	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C846	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C874	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073

C915	065G080512322	CHIP 12NF 25V X7R 0805	9965 000 36992
C860	065G080522122	CHIP 220PF 25V X7R 0805	9965 000 36993
C847	065G080522322	CHIP 0.022UF 25V X7R 0805	9965 000 36043
C831	065G080533132	CHIP 330P 50V X7R 0805	9965 000 36994
C865	065G080533332	CHIP 0.033UF 50V	9965 000 36995
C917	065G080533422	0.33UF -10% 25V X7R 0805	9965 000 36074
C858	065G080539131	CHIP 390PF 50V	9965 000 36996
C813	065G080556131	CHIP 560PF 50V NPO 0805	9965 000 36997
C941	065G080556221	5600PF/25V/NPO/J	9965 000 36998
D851	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D831	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D833	093G6442PP	BAV70 SOT-23	9965 000 35995
D883	093G6444S	LL4148WP	9965 000 36035
ZD874	093G39S24T	RLZ 5.6B LLDS	9965 000 36079
ZD975	093G39S25T	RLZ5.1B LLDS	9965 000 37002
IC941	056G15810T	AZ431AZ-AE1	9965 000 36101
R952	061G17210052T	100HM 5% 1/4W	9965 000 36987
R915	061G17210052T	100HM 5% 1/4W	9965 000 36987
R871	061G17210352T	CFR 10KOHM -5% 1/4W	9965 000 36988
R861	061G20010452T	100K OHM 1/4W 1%	9965 000 36989
R863	061G20033352T	33KOHM 1% 1/4W	9965 000 36990
R859	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
R839	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
C920	065G1K1025T	1000PF/1KV	9965 000 36999
C931	065G517K3322T	3.3NF 500V	9965 000 37000
C927	067G3056804KT	ELCAP 68UF M 25V 105∑ KINGNICHI	9965 000 37001
C952	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076
FB905	071G5523S	BEAD	9965 000 37004
FB901	071G5529	FERRITE BEAD	9965 000 36053
F902	084G554	FOSE 382-5A 250V SICKMANN	9965 000 37005
F901	084G557GP	FUSE 3.15A 250V	9965 000 37006
ZD951	093G39A3552T	ZENER DIODE P6KE8.2A ZOWIE	9965 000 37007
D926	093G6038T52T	FR103	9965 000 36095
D919	093G6038T52T	FR103	9965 000 36095

Key Board

Location	Part No. for TPV	Description	Part No. for TPV
SW1	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
SW2	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
SW3	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
SW4	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
SW5	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
SW6	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
SW7	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
SW8	077G6001GCJ	TACT SWITCH TSPB-2 -NP	9965 000 36000
LED1	081G121GP	GP32032ME	9965 000 36001
R109	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R100	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R101	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R104	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R108	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R103	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R107	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R106	061L0603473	RST SM 0603 RC0603 47K PM5 R	9965 000 36003
R102	061L0603473	RST SM 0603 RC0603 47K PM5 R	9965 000 36003
C101	065G060310332	0.01UF -10% 50V X7R	9965 000 36004
C102	065G060310332	0.01UF -10% 50V X7R	9965 000 36004
C103	065G060310332	0.01UF -10% 50V X7R	9965 000 36004
C104	065G060310332	0.01UF -10% 50V X7R	9965 000 36004
C105	065G060310332	0.01UF -10% 50V X7R	9965 000 36004

16. Different Parts List

Diversity of 190V7FB/00 compared with 190V7FB/27			
Location	**Part No. for TPV**	**Description**	**Philips P/N (12NC)**
E089B	089G404A18NYH	POWER CABLE	9965 000 37502
	CBPC980KGNPHP	CONVERSION BOARD	9965 000 36895
	CBPC980KANPHP	CONVERSION BOARD(AU)	9965 000 38090

Diversity of 190V7FB/69 compared with 190V7FB/27			
Location	**Part No. for TPV**	**Description**	**Philips P/N (12NC)**
E089C	089G410A18NIS	POWER CORD WALL-OUT FOR UK	9965 000 37340
	CBPC980KGNP1P	CONVERSION BOARD ASS'Y	9965 000 37342
	CBPC980KANP1P	CONVERSION BOARD(AU)	9965 000 38394
CN403	033G802718	PIN HEADER 18P	9965 000 36925
CN405	088G35315FH	D-SUB 15PIN	9965 000 35960
CN202	088G35424FH	DV1 CONNECTOR 24PIN	9965 000 36926

Diversity of 190V7FB/93 compared with 190V7FB/27			
Location	**Part No. for TPV**	**Description**	**Philips P/N (12NC)**
E089C	089G414A18NLS	POWER CORD	9965 000 37089
	CBPC980KGNP1P	CONVERSION BOARD ASS'Y	9965 000 37342
	CBPC980KANP1P	CONVERSION BOARD(AU)	9965 000 38394
	P34G1829VBD1T	BEZEL	9965 000 38580
CN403	033G802718	PIN HEADER 18P	9965 000 36925
CN405	088G35315FH	D-SUB 15PIN	9965 000 35960
CN202	088G35424FH	DV1 CONNECTOR 24PIN	9965 000 36926

17. General Product Specification

CONTENT

. ANALOG AND DIGITAL DUAL INPUT

. AUTO PICTURE ADJUSTMENT

. 17 FACTORY PRESET MODES AND 33 PRESET MODES WHICH CAN BE RECOVERED TO PRESET MODES

. USER FRIENDLY OSD DISPLAY FOR MODE IDENTIFICATION /ADJUSTMENT

. MAX. RESOLUTION 1280*1024 NON-INTERLACED AT 76 HZ

. 19” COLOR TFT LCD FLAT PANEL

. EASY TILT BASE

. FULL RANGE POWER SUPPLY 90 – 264 VAC

. CE ENVIRONMENTAL POLICY

. ANTI-GLARE TO REDUCE LIGHT REFLECTION

. POWER MANAGEMENT CAPABILITY

. SOG SUPPORT

. TCO 03

. SMART CONTROL & SMART MANAGEMENT REQUIREMENT

. WEEE REQUIREMENT

. RoHS REQUIREMENT

1. FOREWORD

This specification describes a 19" SXGA multi-scan color TFT LCD monitor with max. resolution up to 1280*1024/75 Hz non-interlaced.
All optical characteristics (including WHITE-D, Brightness, and so on) are determined according to panel specification after warming up approximate 30 minutes that brightness stability is optimal, and follow strictly after panel specification.

2. PRODUCT PROFILE

This display monitor unit is a color display monitor enclosed in PHILIPS global styling cabinet which has an integrated tilt base.

2.1 LCD

2.1.1 Type NR. : LM190E03-TLB5/B7 (LPL)
Outside dimensions : 396.0(w)∗324.0(h)∗16.5(d) (Typ) mm
Pitch (mm) : 0.294 mm x 0.294 mm
Color pixel arrangement: RGB vertical stripes
Display surface : low reflection, antiglare with hard coating
Color depth : 16.2M colors (8 bits)
Backlight : CCFL edge light system
Active area(WxH) : 376.32x301.056mm (19" diagonal)
View angle (CR>10) : 70/70 (min), 80/80 (typ) for Horizontal & 60/70 (min), 75/85 (typ) for Vertical
Contrast ratio : 700:1(Typ.) 450:1(Min.)
White luminance : Original color 250 nits (Min), 300 nits (Typ.)
Gate IC : Toshiba (TLB5), OKI (TLB7)
Source IC : OKI (TLB5), NEC (TLB7)
Response time : 8ms

2.1.2 Type NR. : M190EG02 v0 (AUO)
Outside dimensions : 396.0(w)∗324.0(h)∗17.5(d) (Typ) mm
Pitch (mm) : 0.294 mm x 0.294 mm
Color pixel arrangement: RGB vertical stripes
Display surface : low reflection, antiglare with hard coating
Color depth : 16.2M colors (8 bits)
Backlight : CCFL edge light system
Active area(WxH) : 376.32x301.056mm (19" diagonal)
View angle : 60/60 (min), 70/70 (typ) for Horizontal & 60/50 (min), 70/60 (typ) for Vertical
Contrast ratio : 700:1(Typ.) 500:1(Min.)
White luminance : Original color 240 nits (Min), 300 nits (Typ.)
Gate IC : MEC MN863549, Toshiba JBT6LA2
Source IC : Novatek NT39320 , NEC UPD160087
Response time : 6ms

2.2 Scanning frequencies

Hor. : 30 – 83 K Hz
Ver. : 56 - 76 Hz
Video dot rate : <140 MHz
Power input : 90-264 V AC, 50/60 ± 2 Hz
Power consumption : <**36**W maximum

Functions :
D-SUB: analog R/G/B separate inputs, H/V sync separated, Composite (H+V) TTL level, SOG sync

2.3 Ambient temperature : 0 °C - 35 °C

3. Electrical characteristics

3.1 Interface signals

1). D-Sub Analog

Input signal : Video, Hsync., Vsync

Video : 0.7 Vp-p, input impedance, 75 ohm @DC

Sync. : Separate sync TTL level , input impedance 2.2k ohm terminate
Hsync Positive/Negative
Vsync Positive/Negative
Composite sync TTL level, input impedance 2.2k ohm terminate
(Positive/Negative)

Sync on green video 0.3 Vp-p Negative (Video 0.7 Vp-p Positive)

2). Intel DVI Digital

Input signal: Four channel TMDS signal

3.2 Interface

3.2.1 D-Sub Cable

Length : 1.8 M +/- 50 mm
Connector type : D-Sub male with DDC2B pin assignments.
Blue connector thumb-operated jack screws

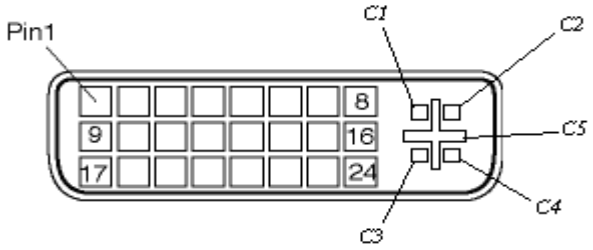
Pin assignment:

PIN No.	SIGNAL
1	Red
2	Green/ SOG
3	Blue
4	Sense (GND)
5	Cable Detect (GND)
6	Red GND
7	Green GND
8	Blue GND
9	DDC +3.3V or +5V
10	Logic GND
11	Sense (GND)
12	Bi-directional data
13	H/H+V sync
14	V-sync
15	Data clock

3.2.2 DVI Cable

The input signals are applied to the display through DVI-D cable.
Length: 1.8 M + 50/- 50 mm (fixed)
Connector type: DVI-D male with DDC2B pin assignments
White connector thumb-operated jack screws

Pin assignment:

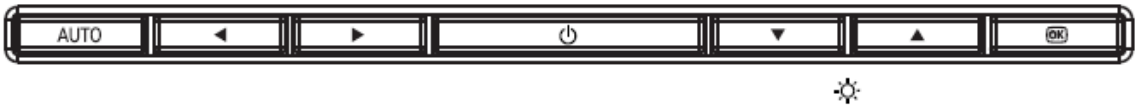


Note the mark “ * ” for DVI-I to Dsub only

Pin No.	Description
1	TMDS data2-
2	TMDS data2+
3	TMDS data2 shield
4	NC
5	NC
6	DDC clock
7	DDC data
8	* Analog V-sync
9	TMDS data1-
10	TMDS data1+
11	TMDS data1 shield
12	NC
13	NC
14	+5V
15	Ground(return for +5V and H/V-sync)(Cable Detect)
16	Hot plug detect
17	TMDS data0-
18	TMDS data0+
19	TMDS data0 shield
20	NC
21	NC
22	TMDS clock shield
23	TMDS clock+
24	TMDS clock-
C1	* Analog R
C2	* Analog G
C3	* Analog B
C4	* Analog H-sync
C5	* Analog GND (Analog R, G, B return)

3.2.3 Software control functions via OSD/control adjustable functions:

OSD control bottom sequence.



Auto – left – right – power – done – (brightness) – up – ok

(1) PC Analog Signal Input Mode

Adjustable functions:

1st LEVEL	2nd LEVEL	3rd LEVEL
MONITOR SETUP		
Exit		
Brightness & Contrast	Brightness Contrast	
Color	Original Color, 9300K,6500K, sRGB, User Define	
Position	Horizontal Vertical	
Input Selection	Analog [Digital]	
More Settings	Language	/00,/05 : English, Spanish, French, German, Italian and Russian /27 : English, French, Spanish, Portuguese & S. Chinese /69,/75,/93,/96 : English, Spanish, French, German, Italian and S. Chinese
	Phase/ Clock	Phase
		Clock
	OSD Settings	Horizontal Vertical
Reset	No Yes	
Serial No.:		
(Serial No.)		
Timing Mode		
Up/Down to Move, ok to Confirm		

(2) Digital interface OSD:

Adjustable functions:

1st LEVEL	2nd LEVEL	3rd LEVEL
MONITOR SETUP		
Exit		
Brightness & Contrast	Brightness Contrast	
Color	Original Color, 9300K,6500K, sRGB, User Define	
Size Position	Size Horizontal Vertical	Full Screen Native Mode Fill with Aspect
Input Selection	Analog,[Digital]	
More Settings	Language	/00 : English, Espanol, Frencais, Deutsch, Italiano, , Russian /27 : English, Espanol, Frencais, Portuguess, S-Chinese /69,/75,/93,/96 : English, Espanol, Frencais, Deutsch, Italiano, , S-Chinese
	Phase/ Clock	Phase Clock
	OSD Settings	Horizontal Vertical
Reset	No Yes	
Serial No.:		
(Serial No.)		
Timing Mode		
Up/Down to Move, ok to Confirm		

Remark : " To move " at OSD window right-bottom.
" To adjust " at OSD window left-bottom.
Remark : Color Temperature factory default setting = 6500K for all regions.

3.3 Timing requirement

3.3.1 Mode storing capacity

Factory preset modes: 17
Preset modes: 33

Note:

1. Screen displays perfect picture at 17 factory-preset modes.
2. Screen displays visible picture with OSD warning when input modes are the 33 preset modes

3.3.2 Factory preset modes (17 modes)

Item	H.Freq. (KHz)	Mode	Resolution	V.Freq. (Hz)	Item	H.Freq. (KHz)	Mode	Resolution	V.Freq. (Hz)
1	31.469	DOS	720x400	70.087	11	60.023	VESA	1024x768	75.029
2	31.469	VESA	640x480	59.940	12	67.500	VESA	1152x864	75.000
3	37.861	VESA	640x480	72.809	13	60.000	VESA	1280x960	60.000
4	37.500	VESA	640x480	75.000	14	63.981	VESA	1280x1024	60.020
5	35.156	VESA	800x600	56.250	15	79.976	VESA	1280x1024	75.025
6	37.879	VESA	800x600	60.317	16	35.000	MACINTOSH	640x480	67.000
7	48.077	VESA	800x600	72.188	17	49.700	MACINTOSH	832x624	75.000
8	46.875	VESA	800x600	75.000	18				
9	48.363	VESA	1024x768	60.004	19				
10	56.476	VESA	1024x768	70.069	20				

3.3.3 Preset Modes (33 modes)

MODE NO.	1	2	3	4
RESOLUTION	640 x 350	720 x 400	640 x 480	640 x 480
Dot clock(MHz)	25.175	28.321	25.175	30.24
f h	31.469kHz	31.468kHz	31.5kHz	35 kHz
A (us)	31.778(800 dots)	31.78(900dots)	31.778(800 dots)	28.571 864 dots)
B (us)	3.813(96 dots)	3.813(108dots)	3.813(96 dots)	2.116 (64 dots)
C (us)	1.907(48 dots)	1.907(54dots)	1.907(48 dots)	3.175(96 dots)
D (us)	25.422(640 dots)	25.42(720dots)	25.422(640 dots)	21.164(640 dots)
E (us)	0.636(16 dots)	0.636(18dots)	0.636(16 dots)	2.116(64 dots)
f v	70Hz(70.09)	70Hz(70.085)	60Hz	67Hz
O (ms)	14.27(449 lines)	14.27(449 lines)	16.683 (525 lines)	15 (525 lines)
P (ms)	0.064(2 lines)	0.064(2 lines)	0.064 (2 lines)	0.086(3 lines)
Q (ms)	1.907(60 lines)	1.080(34 lines)	1.049 (33 lines)	1.114(39 lines)
R (ms)	11.12(350 lines)	12.71(400 lines)	15.253 (480 lines)	13.714(480 lines)
S (ms)	1.175(37 lines)	0.381(13 lines)	0.317 (10 line)	0.086(3 line)
SYNC. H/V POLARITY	+/-	-/+	- / -	- / -
SEP . SYNC	Y	Y	Y	Y

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MODE NO.	5	6	7	8
RESOLUTION	640 x 480	640 x 480	640x480	800 x 600
Dot clock(MHz)	31.500	31.501	36	36
f h	37.861kHz	37.5kHz	36kHz	35.2kHz
A (us)	26.413(832 dots)	26.667 (840 dots)	23.111 (832 dots)	28.444(1024 dots)
B (us)	1.270(40 dots)	2.032 (54 dots)	1.556 (56 dots)	2.000 (72 dots)
C (us)	3.810(120 dots)	3.81 (120 dots)	2.222 (80 dots)	3.556 (128 dots)
D (us)	20.317(640 dots)	20.317 (640 dots)	17.778 (640 dots)	22.222(800 dots)
E (us)	1.016(32 dots)	0.508 (26 dots)	1.555 (56 dots)	0.666 (24 dots)
f v	72.809Hz	75Hz	85Hz	56Hz
O (ms)	13.735(520 lines)	13.333 (500 lines)	11.763 (509 lines)	17.778 (625 lines)
P (ms)	0.079(3 lines)	0.08 (3 lines)	0.069 (3 lines)	0.057 (2 lines)
Q (ms)	0.528(20 lines)	0.427 (16 lines)	0.578 (25 lines)	0.626 (22 lines)
R (ms)	12.678(480 lines)	12.8 (480 lines)	11.093 (480 lines)	17.066(600 lines)
S (ms)	0.45(17 lines)	0.026 (1 lines)	0.023 (1 lines)	0.029 (1 line)
SYNC. H/V POLARITY	-/-	- / -	-/-	+ / +
SEP . SYNC	Y	Y	Y	Y

MODE NO.	9	10	11	12
RESOLUTION	800 x 600	800 x 600	800 x 600	800 x 600
Dot clock(MHz)	40	50	49.498	56.251
f h	37.9kHz	48.077kHz	46.9kHz	53.7kHz
A (us)	26.4 (1056 dots)	20.80 (1040dots)	21.333(1056 dots)	18.631(1048 dots)
B (us)	3.2 (128 dots)	2.400 (120 dots)	1.616 (80 dots)	1.138 (64 dots)
C (us)	2.2 (88 dots)	1.280 (64 dots)	3.232 (160 dots)	2.702 (152 dots)
D (us)	20 (800 dots)	16.00 (800 dots)	16.162 (800 dots)	14.222 (800 dots)
E (us)	1 (40 dots)	1.120 (56 dots)	0.323 (16 dots)	0.569 (32 dots)
f v	60Hz	72Hz (72.188)	75Hz	85Hz
O (ms)	16.579 (628 lines)	13.85 (666 lines)	13.333 (625 lines)	11.756(631 lines)
P (ms)	0.106 (4 lines)	0.125 (6 lines)	0.064 (3 lines)	0.056 (3 lines)
Q (ms)	0.607 (23 lines)	0.478 (23 lines)	0.448 (21 lines)	0.503 (27 lines)
R (ms)	15.84 (600lines)	12.48 (600 lines)	12.8 (600 lines)	11.179 (600 lines)
S (ms)	0.026 (1 line)	0.770 (37 line)	0.021 (1 line)	0.018 (1 lines)
SYNC. H/V POLARITY	+ / +	+ / +	+ / +	+ / +
SEP . SYNC	Y	Y	Y	Y

MODE NO.	13	14	15	16
RESOLUTION	832 x 624	1024 x 768	1024 x 768	1024 x 768
Dot clock(MHz)	57.28	65	75	78.75
f h	49.7kHz	48.363kHz	56.5kHz	60kHz
A (us)	20.11(1152 dots)	20.677(1344 dots)	17.707(1328 dots)	16.66 (1312dots)
B (us)	1.117(64 dots)	2.092(136 dots)	1.813(136 dots)	1.219 (96 dots)
C (us)	3.91(224 dots)	2.462(160 dots)	1.920(144 dots)	2.235 (176 dots)
D (us)	14.52(832 dots)	15.754(1024 dots)	13.653(1024 dots)	13.003(1024 dots)
E (us)	0.563(32 dots)	0.369(24 dots)	0.321 (24 dots)	0.203 (16 dots)
f v	75Hz	60.004Hz	70.004Hz	75Hz (75.000)
O (ms)	13.41(667 lines)	16.666(806 lines)	14.272(806 lines)	13.328 (800 lines)
P (ms)	0.06(3 lines)	0.124(6 lines)	0.106(6 lines)	0.05(3 lines)
Q (ms)	0.784(39 lines)	0.600(29 lines)	0.514(29 lines)	0.446 (28 lines)
R (ms)	12.55(624 lines)	15.880(768 lines)	13.599(768 lines)	12.80 (768 lines)
S (ms)	0.016(1 lines)	0.062(3 lines)	0.053(3 lines)	0.017 (1 line)
SYNC. H/V POLARITY	+/+	- / -	-/-	+ / +
SEP . SYNC	Y	Y	Y	Y

MODE NO.	17	18	19	20
RESOLUTION	1024 x 768	1024 x 768	1152 x 864	1152 x 864
Dot clock(MHz)	83.096	94.5	79.9	94.5
f h	61.1kHz	68.7kHz	54.0kHz	63.9kHz
A (us)	16.367 (1360dots)	14.561(1376 dots)	18.523(1480 dots)	15.661(1480 dots)
B (us)	1.348 (112 dots)	1.016 (96 dots)	1.952(156 dots)	1.016(96 dots)
C (us)	2.022 (168 dots)	2.201 (208 dots)	1.352(108 dots)	1.116(105 dots)
D (us)	12.323(1024 dots)	10.836(1024 dots)	14.418(1152 dots)	12.19(1152 dots)
E (us)	0.674 (56 dots)	0.508 (48 dots)	0.801(64 dots)	1.339(127 dots)
f v	76Hz	85Hz	60Hz	70Hz
O (ms)	13.142 (803 lines)	11.765 (808 lines)	16.671(900lines)	14.283(912lines)
P (ms)	0.049 (3 lines)	0.044 (3 lines)	0.148(8 lines)	0.047(3lines)
Q (ms)	0.507 (31 lines)	0.524 (36 lines)	0.445(24 lines)	0.689(44 lines)
R (ms)	12.57 (768 lines)	11.183 (768lines)	16.004(864 lines)	13.531(864 lines)
S (ms)	0.016 (1 line)	0.014 (1 line)	0.074(4 lines)	0.016(1 lines)
SYNC. H/V POLARITY	+ / +	+ / +	+/+	+/+
SEP . SYNC	Y	Y	Y	Y

MODE NO.	21	22	23	24
RESOLUTION	1152 x 864	1152 x 870	1152 x 900	1152 x 900
Dot clock(MHz)	108	100	94.5	108
f h	67.5kHz	68.7kHz	61.8kHz	71.8kHz
A (us)	14.815(1600 dots)	14.56 (1456 dots)	16.169(1528 dots)	13.926 (1054dots)
B (us)	1.185 (128 dots)	1.28 (128 dots)	1.354 (128 dots)	1.185 (128 dots)
C (us)	2.37 (256 dots)	1.44(144 dots)	2.201 (208 dots)	1.778 (192 dots)
D (us)	10.667 (1152 dots)	11.52 (1152 dots)	12.19 (1152 dots)	10.667 (1152 dots)
E (us)	0.593 (64 dots)	0.32 (32 dots)	0.424 (40 dots)	0.296 (32 dots)
f v	75Hz	75Hz	66Hz	76Hz
O (ms)	13.333 (900 lines)	13.333 (916 lines)	15.151 (937lines)	13.132 (943 lines)
P (ms)	0.044 (3 lines)	0.044 (3 lines)	0.065 (4 lines)	0.111 (8 lines)
Q (ms)	0.474 (32 lines)	0.568(39 lines)	0.501 (31 lines)	0.46 (33 lines)
R (ms)	12.8 (864 lines)	12.678 (870 lines)	14.552 (900lines)	12.533 (900 lines)
S (ms)	0.015 (1 lines)	0.043 (4 line)	0.033 (2 line)	0.028 (2 lines)
SYNC. H/V POLARITY	- / -	- / -	Serr-	+ / +
SEP . SYNC	Y	Y	Y	Y

MODE NO.	25	26	27	28
RESOLUTION	1280 x 960	1280 x 960	1280 x 1024	1280 x 1024
Dot clock(MHz)	108	129.895	108	117
f h	60kHz	75kHz	64kHz	71.7kHz
A (us)	16.667(1800 dots)	13.307(1728 dots)	15.63 (1688 dots)	13.949(1632 dots)
B (us)	1.037(112 dots)	1.047 (136 dots)	1.037 (112 dots)	0.957 (112 dots)
C (us)	2.889(312 dots)	1.725 (224 dots)	2.296 (248 dots)	1.915 (224 dots)
D (us)	11.852(1280 dots)	9.857 (1280 dots)	11.852 (1280 dots)	10.94 (1280 dots)
E (us)	0.889(96 dots)	0.678 (88 dots)	0.445 (48 dots)	0.137 (16 dots)
f v	60Hz	75Hz	60Hz	67Hz
O (ms)	16.667(1000 lines)	13.333(1002 lines)	16.661(1066 lines)	14.883 (1067lines)
P (ms)	0.05(3 lines)	0.039 (3 lines)	0.047 (3 lines)	0.112 (8 lines)
Q (ms)	0.600(36 lines)	0.48 (36 lines)	0.594 (38 lines)	0.46 (33 lines)
R (ms)	16(960 lines)	12.774 (960 lines)	16.005(1024 lines)	14.283(1024 lines)
S (ms)	0.017(1 lines)	0.04 (3 lines)	0.015 (1 line)	0.028 (2 lines)
SYNC. H/V POLARITY	+/+	+ / +	+ / +	+ / +
SEP . SYNC	Y	Y	Y	Y

MODE NO.	29	30	31	32
RESOLUTION	1280 x 1024	1280 x 1024	1280 x 1024	960x720
Dot clock(MHz)	130.223	135	138.008	57.58
F h	76kHz	80kHz	81.1kHz	44.76kHz
A (us)	13.158(1712 dots)	12.504(1688 dots)	12.326(1664 dots)	22.34(1286 dots)
B (us)	1.024 (133 dots)	1.067(144 dots)	0.474 (64 dots)	1.72(99 dots)
C (us)	1.905 (248 dots)	1.837(248 dots)	2.133 (288 dots)	2.58(148 dots)
D (us)	9.83 (1280 dots)	9.481(1280 dots)	9.481 (1280 dots)	16.67(960 dots)
E (us)	0.399(51 dots)	0.119(16 dots)	0.238 (32 dots)	0.856(49 dots)
F v	72Hz	75Hz	76Hz	60Hz
O (ms)	14 (1064 lines)	13.329(1066 lines)	13.139(1066 lines)	16.667(746 lines)
P (ms)	0.02 (2 lines)	0.038(3 lines)	0.099 (8 lines)	0.067(2.9 lines)
Q (ms)	0.5 (38 lines)	0.475(38 lines)	0.394 (32 lines)	0.495(22 lines)
R (ms)	13.468(1024 lines)	12.804(1024 lines)	12.622(1024 lines)	16.081(720 lines)
S (ms)	0.012 (0 line)	0.012 (1 line)	0.024(2 lines)	0.0228(1 lines)
SYNC. H/V POLARITY	+ / +	+/+	- / -	-/+
SEP . SYNC	Y	Y	Y	Y

MODE NO.	33
RESOLUTION	960X720
Dot clock(MHz)	72.42
F h	56.4kHz
A (us)	17.73(1284 dots)
B (us)	1.44(104 dots)
C (us)	2.21(160 dots)
D (us)	13.256(960 dots)
E (us)	0.780(56 dots)
F v	75Hz
O (ms)	13.333(752 lines)
P (ms)	0.053(3 lines)
Q (ms)	0.5(28 lines)
R (ms)	12.766(720 lines)
S (ms)	0.0184(1 lines)
SYNC. H/V POLARITY	-/ +
SEP . SYNC	Y

3.4 Horizontal scanning

Sync polarity : Positive or Negative
Scanning frequency : 30 – 83 K Hz

3.5 Vertical scanning

Sync polarity : Positive or Negative
Scanning frequency : 56 - 76 Hz

3.6 Power input connection

Power cord length : 1.8 M
Power cord type : 3 leads power cord with protective earth plug.

3.7 Power management

The monitor must comply with the Microsoft On Now specification, with two power management states, as defined by the VESA DPMS document. The monitor must appropriately display the DPMS state.

Mode	HSYNC	VSYNC	Video	Pwr-cons.	Indication	Rec. time
Power-On	On	On	active	< **36** W	Green LED	--
Off	Off	Off	blanked	< 1 W	Amber LED	< 3 s
DC Power Off			N/A	< 1 W	LED Off	

3.8 Display identification

In accordance with VESA Display Channel Standard Ver.1.0 and having DDC 2B capability

4. Visual characteristics

4.1 Test conditions

Unless otherwise specified, this specification is defined under the following conditions.

(1) Input signal: As defined in 3.3, 1280x 1024 non-interlaced mode (64K/60Hz), signal Sources must have 75 ohm output impedance.
(2) Luminance setting: controls to be set to 300 nits with full screen 100 % duty cycle white signal

(3) Warm up: more than 30 minutes after power on with signal supplied.

(4) Ambient light: 400 -- 600 lux.

(5) Ambient temperature: 20 ± 5 °C

4.2 Brightness

> 300 nits (at panel color temperature, at center of the screen, set contrast and brightness at maximum.)

4.3 Image size

Actual display size 376.32x301.056mm

4.4 Brightness uniformity

Set contrast at 100% and turn the brightness to get average above 300 nits at centre of the screen. Apply the Fig 1, it should comply with the following formula:

$$\frac{B\_min}{B\_max} \times 100\% > 75\%$$

Where B_max =Maximum brightness
B_min = Minimum brightness

4.5 Check Cross talk (S)

Apply Pattern 2. Set contrast and brightness at 100 %.
Measure YA. Then output Pattern 3 and measure YB.
the cross talk value :

$$\frac{ABS(YA - YB)}{YA} \times 100\% < 1.5\ \%$$

4.6 White color adjustment

There are three factory preset white color 9300K, 6500K, sRGB.

Apply full gray64 pattern, with brightness in 100 % position and the contrast control at 50 % position.

The 1931 CIE Chromaticity (color triangle) diagram (x,y) coordinate for the screen center should be:

9300K CIE coordinates	X = 0.283 ±0.020	Y = 0.297 ±0.020
6500K/ sRGB CIE coordinates	X = 0.313 ±0.020	Y = 0.329 ±0.020
sRGB CIE coordinates	X = 0.313 ±0.020	Y = 0.329 ±0.020

5. Mechanical characteristics

5.1 Cosmetic - **Philips ID**

5.2 Mechanical data files - ProE files required

5.3 Location of Philips logo - **Per Philips make-up sheet**

Gap between panel and front bezel < 1.3mm (Static measurement w/o outer force anywhere, And depend on LPL & AUO panel spec.)

5.4 Location of Control icons - **Per Philips make-up sheet**

Front side: Per Philips graphic sheet
Rear : Per Philips graphic sheet

5.5 Color for resin/paint - **Per Philips make-up sheet**

5.6 Resins

- RoHS required
- WEEE required.
- Resin type/selection refer to Project Book Section 7.2 Plastic material.

5.7 If paint is used

- RoHS required
- WEEE require

5.8 Plastic mold tooling

- Tooling to be designed to minimize cosmetic defects induced by molding process (sink, blush, weld lines, gate marks, ejector marks, etc.).
- Painting to cover up cosmetic defects due to molding is strongly discouraged.

5.9 Plastics flammability

- All Plastics to be Flame Retardant UL 94-V0 or Better (if monitor weighs less than 18kg; UL94-V0 is OK).
- All major plastic parts (bezel, back cover, ~~base~~) need to be molded from same resin.

5.10 Texture/Glossing of housing

- The texture area and texture no should follow Philips make-up sheet.
- The exterior surfaces shall have a uniform texture.
- Philips must approve the mold texturing.
- Detail document for texture refer to UAN-D249.
- < = 20 gloss units

5.11 Tilt and swivel base

- Tilt angle: -5 ° to +25 °

5.12 Label

- Regulatory label / Carton label should follow Philips requirement.
- Detail document refer to Philips Engineering Reference Book.

5.13 Product dimension / Weight

- Unit dimension (incl. pedestal) : 424(W) * 417.4 (H) * 235 (D) mm
- Packed unit dimension (carton) : 453 W* 486 H* 251 Dmm(for other regions)
- Net weight : 5.7Kg (Including I/F cable 240 g)
- Gross weight : 7.6Kg(for other regions)

5.14 Transportation

Transportation standards refer to TYE-M0002.

5.14.1 Transportation packages

Packaging and wrapping shall be sufficient to protect the product against damage or loss during shipment from the supplier to the destination specified in the purchase order. All packaging materials are subject to test and evaluation per TYE-M0002. The cushion material shall be constructed using EPS material.

5.14.2 Transportation Test

The overall test refer to TYE-M0002.
Vibration, drop test should be performed at ambient temperature (20°C to 23°C) and relative humidity (40% to 65%).

A. Transportation test specification for all regions except China/India

- Package test
  1. Random Vibration test
  2. Drop test
  3. Cold Drop test (for design reference)
- Un-package test
  1. Half sine shock test (non operation)

B. Transportation test specification for China/India

- Package test
  1. Random Vibration test
  2. Drop test
  3. Cold Drop test (for design reference)
- Un-package test
  1. Sine vibration (operating)
  2. Half sine shock test (non operation)

5.15 Pallet / Container loading

Transportation standards refer to TYE-M0002.

- Air shipment - tbc
- Sea container 20'(pallet/slip sheet) -tbc
- Sea container 40'(pallet/slip sheet) - tbc
- Sea container 40' High Cube (pallet/slip sheet) - tbc
- Truck shipment - tbc

A. Air shipment
B. Container loading for other regions
C. Truck loading for other regions

6. Environmental characteristics

The following sections define the interference and susceptibility condition limits that might occur between external environment and the display device.

6.1 Susceptibility of display to external environment

Operating
- Temperature: 0 to 40 degree C
- Humidity: 80% max
- Altitude: 0-3658m
- Air pressure: 600-1100 mBAR

Storage
- Temperature: -20 to 60 degree C
- Humidity: 95% max
- Altitude: 0-12192m
- Air pressure: 300-1100 mBAR

Note: recommend at 5 to 35°C, Humidity less than 60 %

6.2 Transportation tests

Refer to 5.15.2

6.3 Display disturbances from external environment

According to IEC 801-2 for ESD disturbances

6.4 Display disturbances to external environment

7. Reliability

7.1 Mean Time Between Failures

System MTBF (Including the LCD panel and CCFL) : 50,000 hrs

8. Quality assurance requirements

8.1 Acceptance test

According to MIL-STD-105D Control II level

AQL: 0.4 (major)
1.5 (minor)
(Please also refer to annual quality agreement)
Customer acceptance criteria: UAW0377/00

9. Philips' Flat Panel Monitors Pixel Defect Policy

BRIGHT DOT DEFECTS	**ACCEPTABLE LEVEL**		
MODEL	**190V7**		
1 lit sub-pixel	2		
2 adjacent lit sub-pixels	0		
3 adjacent lit sub-pixels (one white pixel)	0		
Distance between two bright dot defects*	25mm or more		
Bright dot defects within 20 mm circle	0		
Total bright dot defects of all type	2		

BLACK DOT DEFECTS	**ACCEPTABLE LEVEL**		
MODEL	**190V7**		
1 dark sub-pixel	4		
2 adjacent dark sub-pixels	2		
3 adjacent dark sub-pixels (one white pixel)	0		
Distance between two black dot defects*	15mm or more		
Black dot defects within 20 mm circle*	1		
Total black dot defects of all type	4		

TOTAL DOT DEFECTS	**ACCEPTABLE LEVEL**		
MODEL	**190V7**		
Total bright or black dot defects of all type	5		

10. Artworks

* 1 or 2 adjacent sub-pixel defects = 1 dot defect

Fig 1: Brightness Uniformity

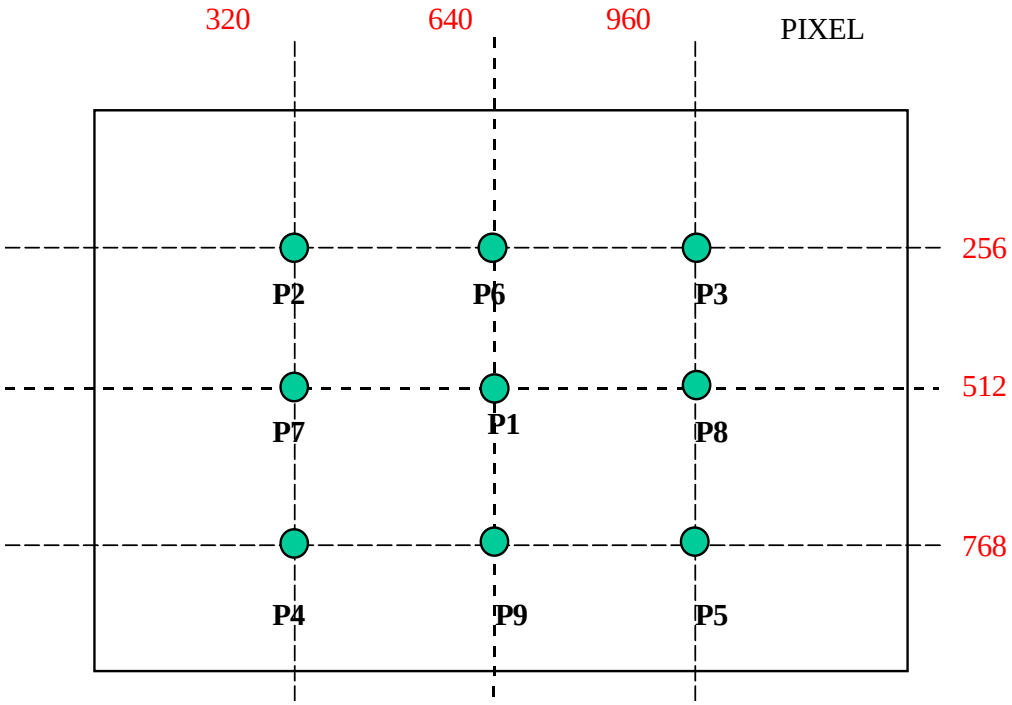


Fig 2: Cross talk pattern

Gray level 46 (64 Gray level)

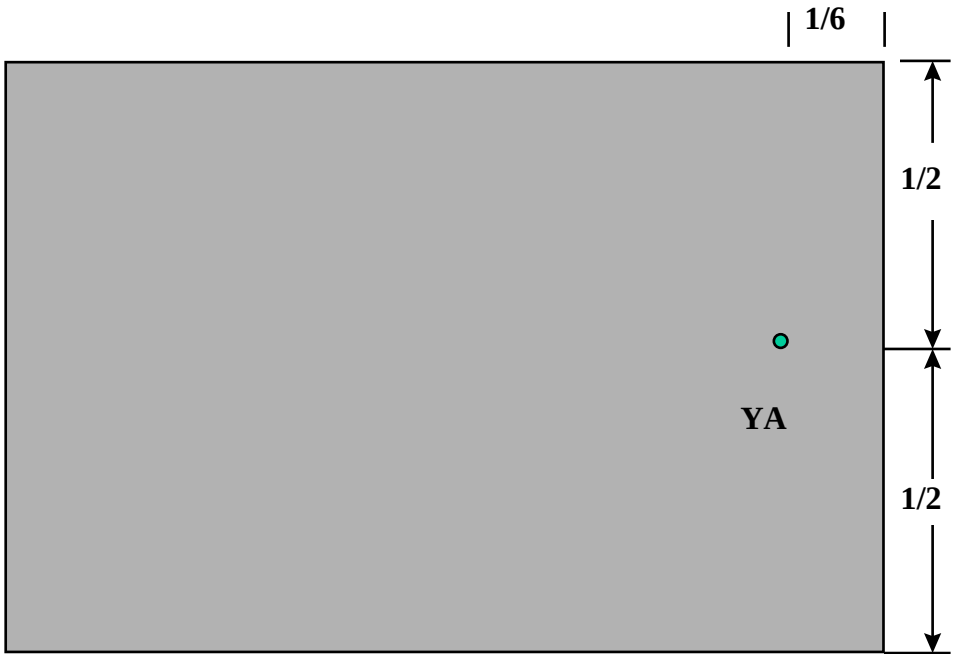
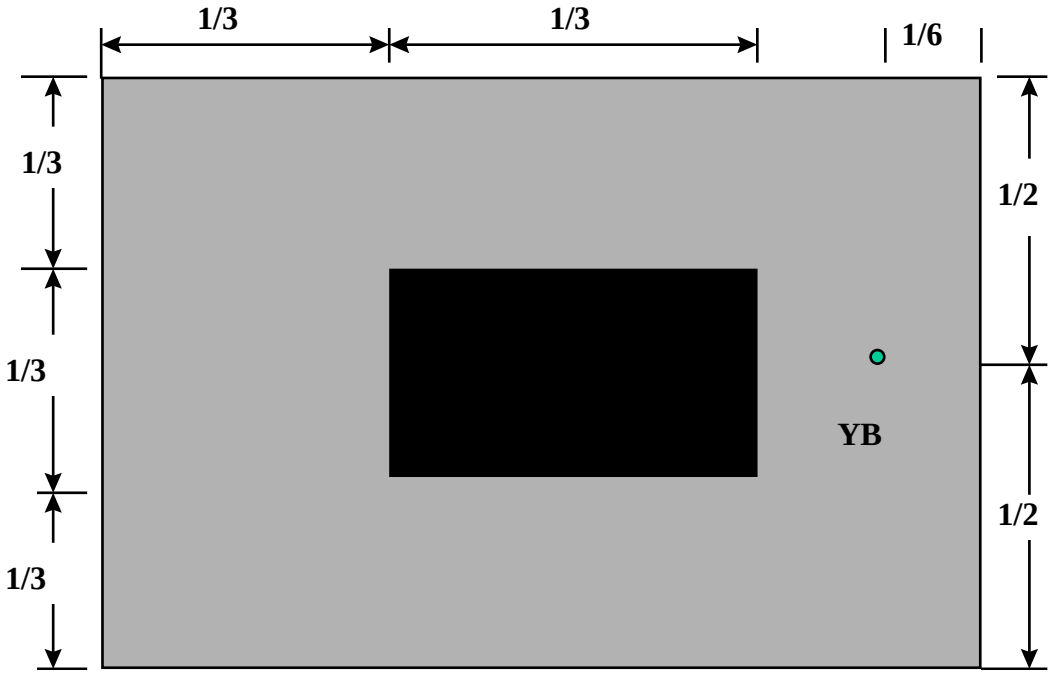
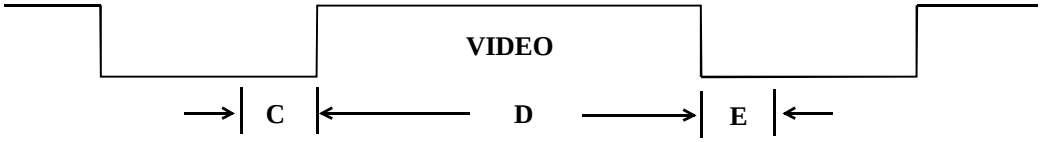


Fig 3: Cross talk Pattern

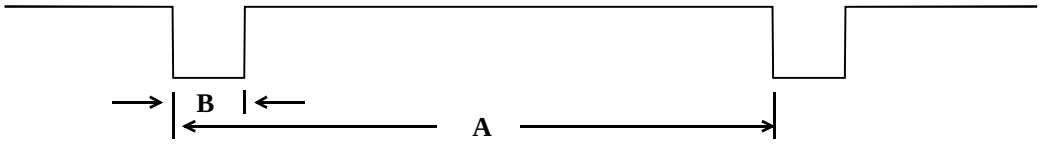
Center at Gray level 0 (Black)

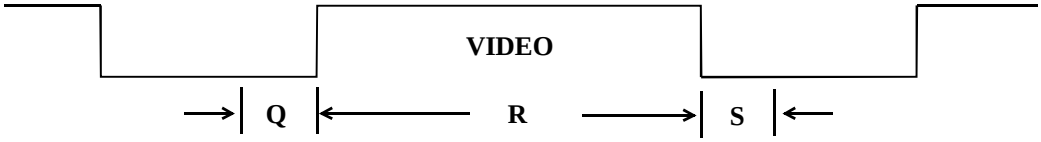


SEPARATE SYNC.

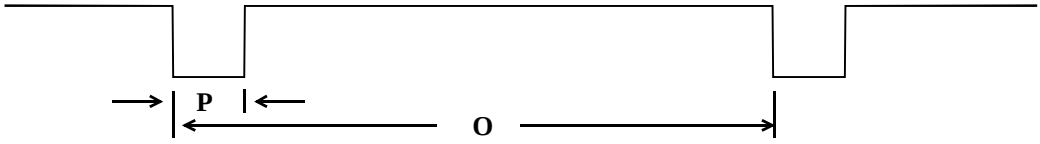


HORIZONTAL

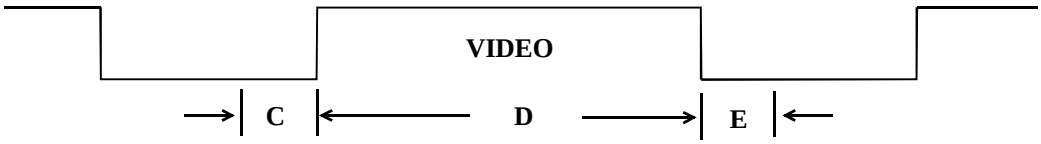




VERTICAL



COMPOSITE SYNC.



HORIZONTAL

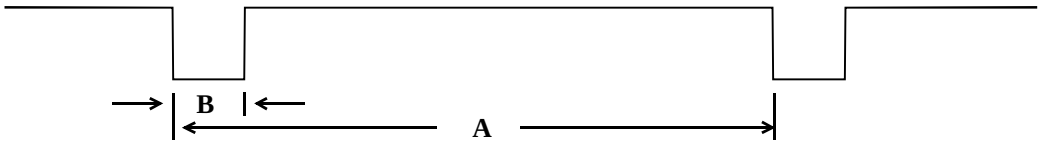


FIG-4 TIMING CHART -1